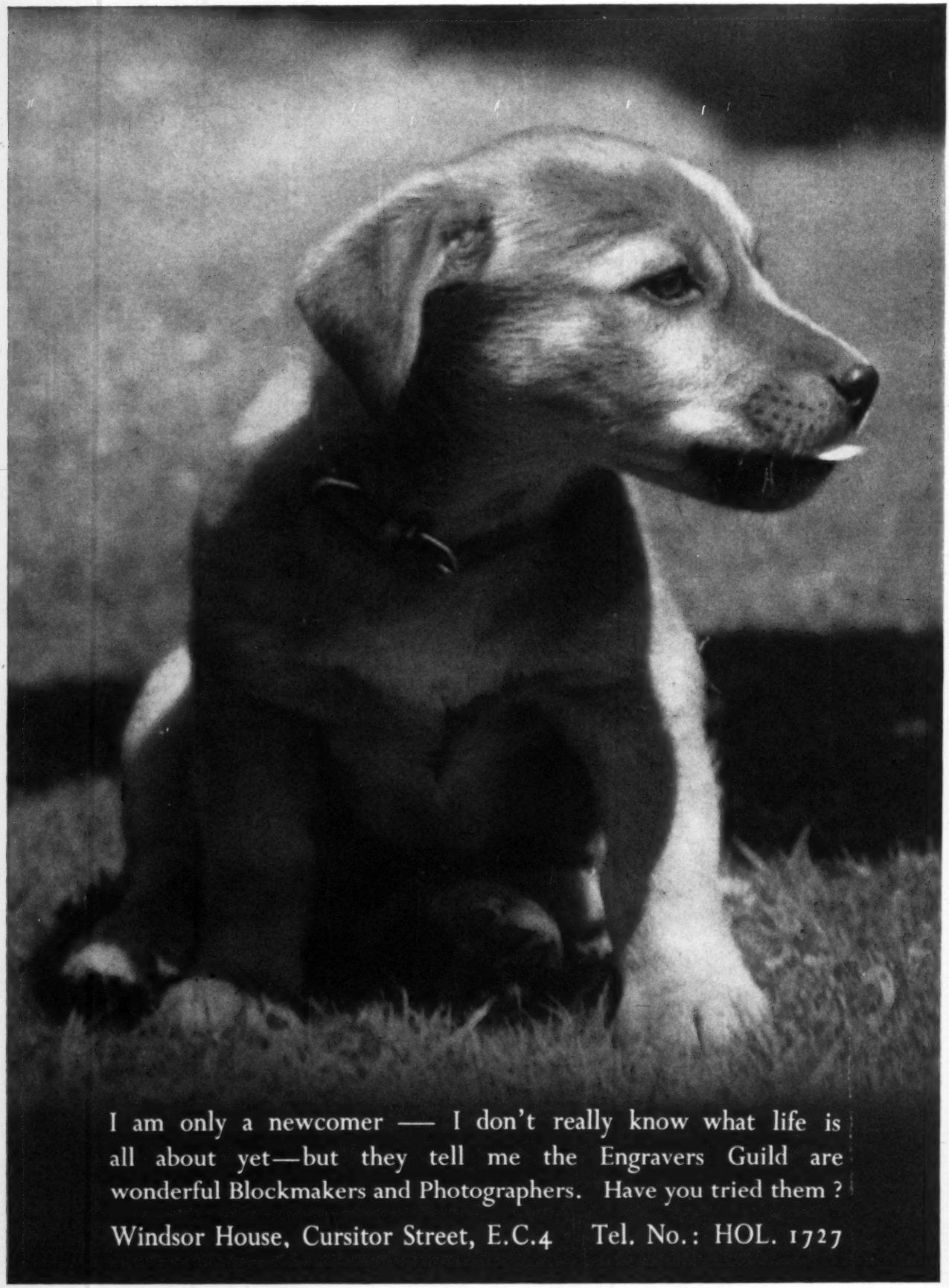
THE ARCHITECTURAL REVIEW VOLUME CXXIII NUMBER 733 FEBRUARY 1958 FIVE SHILLINGS


I am only a newcomer — I don't really know what life is all about yet—but they tell me the Engravers Guild are wonderful Blockmakers and Photographers. Have you tried them ?
Windsor House, Cursitor Street, E.C.4 Tel. No.: HOL. 1727

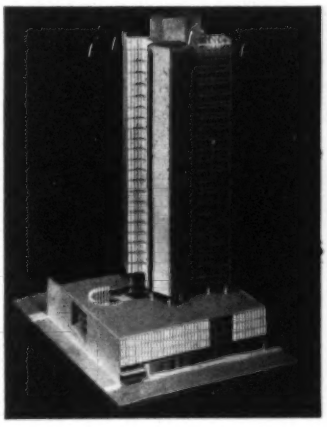
MARGINALIA

Adam Restored

The process of recovering, or restoring, the original Adam interiors of Home House in Portman Square, London (now occupied by the Courtauld Institute of Art), has been carried a stage further by the completion of the work in the Etruscan Room, 1. This was one of the bare handful of eighteenth-century rooms with Etruscan decoration (i.e. based upon the colours of Greek vases, and the motifs of Roman mural art) still surviving, and although apparently painted out, Adam drawings for the original decoration existed in the Soane collection. However, when the

1

walls were examined, no trace of these decorations could be found, and it seems likely that only the ceiling, apses, fireplace and frieze (all of which have been returned to their pristine splendour) were ever carried out to his designs. The work of restoration was executed by, and under the direction of, the Institute's technical department, and the expense defrayed by a grant from the Pilgrim Trust.



2

High Rise in Rhodesia

Designed after on-the-spot research into hot-climate office-blocks in Caracas and Milan, the new office-tower for Rhodesian Selection Trust in Salisbury, Southern Rhodesia, is the work of a local firm of architects, D'Arcy Cathcart and Son, in collaboration with Dennis Lennon. The preliminary model, 2, shows what is—by now—the normal grouping of the main elements of accommodation into a low block housing entrance facilities, double-deck car-parking, etc., and a slim tower rising eighteen storeys to house the actual offices. This tower is the most interesting and innovating part of the design, being conceived plan-wise as a split X, with the stair and lift tower inserted between the two halves, thus permitting a more-or-less north and south presentation of the longer walls of each arm, which are glazed, and a short blank wall toward the westering afternoon sun.

3

4

Car-wash Canopy

To provide cover for the various service bays and other facilities required for a drive-in car-cleaning station in Pasadena, Cal., the Pasadena architectural partnership of Whitney Smith and Wayne Williams (AR, May, 1957) recently devised a canopy structure of I-section steel uprights, connected at roof-height by steel angles crossing one another to make a diamond interlace (as viewed in end-elevation). A few of the bays in this structure were left open to the sky, but most were roofed in with steel decking to create the three-dimensional pattern of slanted planes seen in 3. The basic geometry of the structure ensures that any one plane will be pitched in the opposite slope to any of its neighbours, and thus creates a sun-shade with excellent inherent ventilation characteristics, and a strong eye-catching quality as well.

Highlights at Nolan's

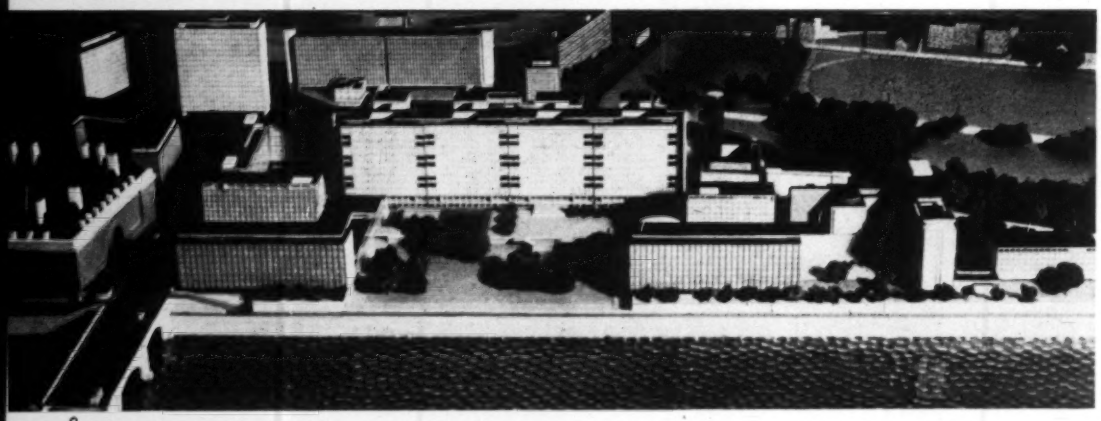
The process of 'de-modernizing' pubs—that is, removing from them the genteel and institutional modifications of the Thirties and early Forties—is one that should spread, though its beginnings are very slow as yet. However, an admirably bold move in the right direction has been made in Dublin, where Sam Stephenson has de-modernized a ripely Victorian house on St. Stephen's Green, 4, without actually re-Victorianizing it. Not only has he clearly drawn heavily on the general proposals consistently advanced by the AR, but he has also paid his respects to the local Irish vernacular art of diapering, the creation of illusionistic rustication by means of paint-work, which Osbert Lancaster dubbed *Celtic Highlights* (AR, January, 1948). Even this he has done without slavish revivalism, for it is thought that there are no vernacular examples of such gilding of the lily as to illusionistically highlight an actual three-dimensional projection (as happens all down the quoining) nor of diapering directly on brickwork, without the interposition of a coat of plaster.

Levitation in Ciment Fondu

The application of statuary directly to a wall surface, without framing or visible corbels under its feet, can be relied upon to give an illusion of gravity defied, as Baroque designers like the Asam brothers knew to their (aesthetic) advantage. The effect has not been much exploited in recent architectural sculpture (one

5

thinks of the Epstein in Cavendish Square, or the Lipchitz on the Ministry of Education in Rio, both of which eschew it) but a figure symbolizing the liberating effects of education, 5, by Ben Franklin, on a new school in Leicestershire, makes full use of it. The group, which is in



6

ciment fondu, with the main figure twelve feet high, is the second of three Franklins commissioned by the Leicestershire Education Authority—an example of sustained artist-patron relationship rare in the annals of recent public patronage.

St. Thomas's Hospital

The progressive revelation of more and more weaknesses in the basic fabric of St. Thomas's Hospital, London, and of inadequacies in the foundations, has led the Governors to abandon their proposals for reconstructing the existing bomb-damaged buildings, in the manner set out in Sir William Holford's studies for the Hospital, and to adopt instead a scheme prepared by W. Fowler Howitt, for a complete rebuilding. The new proposals, which Mr. Howitt has worked out with Sir William Holford, who remains honorary consultant to the hospital, retain only three of the earlier buildings, and call for the creation of a single large ward block, parallel to the Embankment and set well back from the Thames, 6, involving the diversion of Lambeth Palace Road. Ancillary services will be grouped in low buildings at the foot of this main block, and the only other high slabs will be the staff-houses, standing well forward toward the river, framing a green court with views across to the Houses of Parliament.

CORRESPONDENCE

Pleasure Gardens at Bomarzo

To the Editors,

SIRS,—I was much interested in Mr. Davidson's explanation of Bomarzo as put forward in his letter published in the AR of October. I feel, however, that the problem of the sex of the figure which is thrown down by the Giant finds its best explanation in the story of the madness of Attic and the festival of Cybele, the Magna Mater (Ovid, Fasti IV 237–44)

ille etiam saxo corpus laniavit acuto,
longaque in immundo pulvere tracta coma est,
voxque fuit 'merui! meritas do sanguine poenas.
a! pereant partes, quae nocuere mihi!
a! pereant' dicebat adhuc, onus inguinis aufert,
nullaque sunt subito signa relicta viri.
venit in exemplum furor hic, mollesque ministri
caedunt jactatis vilia membra comis.

Such an orgy was probably the subject of one of the reliefs (and the subsequent tapestry copies, now in Vienna, 7) in Fontainebleau after designs by Rosso Fiorentino (cf. Sven Lõngren in Figura I). Since Ovid's Fasti were much less popular than his Metamorphoses and few illustrated editions exist it seems not at all unlikely that the inventor of this scene took another illustration from Ovid as his prototype. I have pointed out in *Bomarzo II* that there are a number of features pointing to the Florentine ambiente. A recent attribution by M. Calvesi (*Scritti in Onore di L. Venturi, Roma* 1956) to Ammannati would fit in well then. Calvesi has also found close resemblances to 'enchanted woods' in the two Tassos. In Torquato following Bomarzo, in Bernardo as a source: in the *Sacro Bosco* the hero searching for his beloved is tested. But was that its programme, are there more than odd coincidences? Perhaps, however, Bernardo was the adviser of this conceit, which was recently interpreted as a labyrinth, *toul simple* (G. R. Hocke, *Die Welt als Labyrinth*, Hamburg 1957).

Yours, etc.,
S. LANG.

7

Crystal Palace Garden

To the Editors.

SIRS,—We should like to support your correspondent Joan Higgins who asks for the preservation of the Paxton Garden at The Crystal Palace. In your sister publication, *The Architects' Journal*, we once suggested the retention of what is known as Sandow's Gymnasium which is partly built of what we believe to be the same 'curtain walling' of cast iron as was used in the Palace itself.

This structure we discovered when we were given facilities to see the grounds prior to our preparing a scheme in which we envisaged a permanent exhibition there of a steam roundabout, a coal cart, a chariot milk cart, a hand milk cart, a horse hearse and a canal boat, etc.; particularly things with a South London affiliation.

We have not in mind a stuffy collection, but selective articles which would complement the delightful modern structure proposed for the site.

Yours, etc.,
BARBARA JONES and
GEOFFREY DUNN.
Bromley, Kent.

New Brutalism

To the Editors.

SIRS,—Could we please hear from the Editors of the REVIEW as to why so many pages in this cultured publication are devoted to the 'New Brutalism'? It is an architecture of lazy minds and barren spirits, far from the intellectual dignity and emotional richness represented by most examples and articles found in the REVIEW.

The House at Watford, Herts, illustrated in the September issue, is a shocking piece of architectural illiteracy in plan, construction, and appearance. Its pretentious casualness is so vulgar that it was with relief that we could turn to the quiet fantasy and simple casualness of the Hastings fishermen storehouses a few pages further on in the same issue.

Your influence on student minds may result in great harm, if it has not already done so, unless critical searchlights are directed upon the seductive arguments which claim that the conscious, educated casualness of the New Brutalists is related to the spontaneous quality of anonymous architecture. Let us have more good back-country builders' houses or storehouses, and fewer far-fetched pieces of nonsense—especially if they cannot claim even rugged charm or whimsey!

Yours, etc.,
FRED LASSERRE.
School of Architecture,
University of British Columbia.

George Basevi

To the Editors.

SIRS,—I am collaborating in writing a Biography of George Basevi (1794–1845), architect and pupil of Sir John Soane.

I should be grateful for any information on Basevi and in particular should be interested to hear from any of his descendants. Letters, drawings and other material will be handled with great care and returned without delay.

Yours, etc.,
MICHAEL DONELAN.
102 Belgrave Road,
London, SW1.

INTELLIGENCE

The BBC has asked three sculptors to submit models for a piece of sculpture to be placed in the new Television Centre at White City in West London. They are H. B. Huxley-Jones, Maurice Lambert and David McFall. The sculpture will occupy the centre of a circular garden, 150 feet in diameter, approached by a colonnade 90 feet wide and 22 feet high.

The National Smoke Abatement Society has become the National Society for Clean Air. Formed in 1929, the Society started the survey of air pollution that is now nation-wide and conceived the successful idea of smokeless zones, and were the first to advocate the prior approval of industrial plant as an essential part of a policy to prevent new sources of pollution. A vast amount of work still needs to be done; to reach the target of smokeless 'black areas' within fifteen years means an average of 300,000 acres of smoke control areas each year. For 1957, the first year of the Act, the total is 489 acres and schemes prepared for 1958 amount so far to less than 10,000 acres.

ACKNOWLEDGMENTS

The photographs of the Branch Library at Beaconsfield (December AR, page 410) were by John Pantlin, who also took those of the Laboratories at Welwyn (October AR, page 263) previously credited to Brazier.

The two four-colour half-tone blocks of Pinehurst Laboratories, Current Architecture, pages 129 and 130, are used by kind permission of Stewart & Grey, Ltd.

MARGINALIA, pages 87–88: 1, Kerry Downes; 3, Deegan-photo. FRONTISPIECE, page 90: University of Toronto. BISHOP BERKELEY, pages 91–93: 1, National Museum of Ireland; 5, Massachusetts Historical Society. COVENTRY CHURCHES, pages 94–101, Galwey, Arphot. ADAM MISCELLANY, pages 102–109: 3, 4, 5, McCormick. MEXICAN THEATRES, pages 110–113, Guillermo Zamora. TROWBRIDGE, pages 114–117, Nairn and Cullen, Arphot. OFFICES IN ALBEMARLE STREET, pages 118–123: 1, 3, Toomey, Arphot; 2, Erno Goldfinger; 4–12, Galwey, Arphot. FATEHPUR SIKRI, pages 124–128: page 125, Courtauld Institute of Art; 1–4, University of Toronto; 5, Government of India Press Information Office. CURRENT ARCHITECTURE, pages 129–132: Warehouse and Offices in Nottingham, John Pantlin; Pub in Crawley New Town, A. C. K. Ware for Whitbread & Co. Ltd. MISCELLANY, pages 133–142: Exhibitions, 1, Arts Council; 2, Augustin Dumoge; 3, Ernest Brown & Phillips Ltd., Leicester Galleries; 4, Beaux Arts Gallery; Whitby Churches, Galwey, Arphot. Functional Tradition, 1–3, 7, 9–11, Eric de Maré; 6, John Piper; 8, J. M. Richards. Counter Attack, Nairn, Arphot. Nervi, 1–4, Gherardi-Mascetti. SKILL, pages 143–156: Interiors, Thomas de la Rue showrooms, John Maltby for D.R.U.; Holborn showroom, Henry C. Brewer; U.S.A.F. Officers Club, John Maltby for Heal's Contracts Ltd. Design Review: Necchi sewing machine, COID; Braun mixer, Marcel Braun; Gio Ponti chair, Conran & Co.; Race seating, Carbonora. Lettering Techniques: 1, Desmond Tripp Ltd.; 2, Hobbs, Offen & Co. Ltd.; 3, John Harris; 4, Helen Simpson, Arphot; 6–10, Drakard & Humble Ltd.; 11, Galwey, Arphot.

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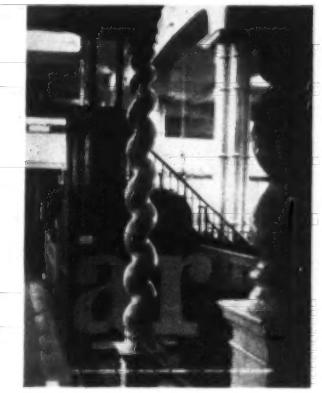

The Cover looks from the altar of St. Mary's, Whitby, through a three-dimensional space-cage of ecclesiastical equipment rare nowadays in English parish churches, where furnishings are seldom more than pew-high and the rest of the space remains uninterrupted clear up to the rafters. This mariners' church, fitted out like a ship's cabin or a chandler's store, is one of the few that still retains its full inventory of eighteenth-century liturgical tackle, and is described by Kenneth Rowntree on page 136.

87 **Marginalia**

90 **Frontispiece**

91 **Bishop Berkeley** *by Marcus Whiffen* Though he is among the best known of English eighteenth-century philosophers, Bishop Berkeley is little known for his interest in architecture and architectural theory. Yet he stood close to the circle of Lord Burlington; he designed at least one house, laid out an ideal town-plan for the Bermudas, and uttered in print opinions that anticipate those of the Adam Brothers by some forty years. But his views were not all Adamitic, as Mr. Whiffen shows—like the Burlington connection he opposed Baroque extravagance, but he also opposed Shaftesbury's free-thinking, and in the third dialogue of his *Alciphron* (where he discusses architecture) as part of his attack on Shaftesbury, he produces an extremely relativistic or functional theory of aesthetics, opposed to the absolute values of the Platonic tradition. This, Mr. Whiffen suggests, raises an important query, for Burlingtonian theory is generally regarded as Shaftesburian in extraction and Platonic in intention, but may prove to be less of either when the Berkeley connection has been properly appraised.

94 **Three Coventry Churches:** *Architects, Basil Spence and Partners*

102 **A Robert Adam Miscellany** With our general view of the eighteenth-century undergoing an extensive overhaul (as in Mr. Whiffen's article on Berkeley) our view of the Adam Brothers is also undergoing extensive modification—and the changes are being hastened by a steady supply of new information on their background and connections. In this collection of Adam studies, John Fleming chronicles the celebrated journey to Spalatro, and the part played by Clerisseau in preparing the plates of Diocletian's palace—a vexed question on which some unpublished drawings from the Hermitage, Leningrad, shed fresh light; T. C. Barker supplies a note on the commercial activities of John Adam, the least known of the Brothers; John Harris discusses the Baroque origins of the transparent portico at Osterley, and shows Robert Adam's version to have been preceded by knowledge of one by Talman; and M. J. Chandler produces the documents concerning the Adams' authorship of the square of houses at Frederick's Place, in the City of London.

110 **Theatre in Mexico City:** *Architect, Alejandro Prieto*

114 **Trowbridge** *by Gordon Cullen* Unlike Gloucester, which is a text-book example of a town based on a Roman crossing, with two major roads passing at right angles straight through its centre, Trowbridge in Wiltshire presents an entirely different pattern of traffic movement. In this fourth and last Townscape study undertaken in conjunction with Bristol University, Mr. Cullen demonstrates how the circulation pattern of the town is indeed circulatory as well as serpentine, with distributive arteries feeding the traffic into the still areas between and controlled vistas into public open spaces, and one major still area in the very heart of the town, already pierced by pedestrian ways, that could be developed into a new kind of central precinct.

118 **Offices in Albemarle Street, W.1:** *Architect, Ernö Goldfinger*

124 **Fatehpur Sikri** *by Jaqueline Tyrwhitt* Although it may appear to Western eyes to exhibit the kind of accidental planning that develops in the passage of time, Fatehpur Sikri, the ideal capital city of Akbar the Great, was completed in a single building-campaign of only four years, on a clear site. It seems certain, therefore, that the quality of its planning is deliberate, and Miss Tyrwhitt shows that while it may lack the perspective vistas which are still so often synonymous with planning in European minds, it appears to have been consciously designed to be viewed panoramically, by a perambulating viewer, much as were the Palaces and temples of Peking.

129 **Current Architecture**

Miscellany

133 **Books**

134 **Exhibitions**

136 **Furnishing**

137 **Functional Tradition**

140 **World**

141 **Counter Attack**

Skill

143 **Interiors: Showrooms for Thomas de la Rue, London, W.1:** *Designers, Design Research Unit*

146 **Window Showrooms, London, W.C.1:** *Architects, Bronek Katz and R. Vaughan*

146 **U S A F Officers' Club, South Ruislip:** *Designers, Heal's Contracts*

147 **House in Hull:** *Architect, Alexander Potter*

148 **Design Review**

149 **Techniques: Small Scale Lettering,** *by John Sharp*

154 **The Industry**

156 **Contractors**

Authors: *John Fleming* has published articles in *Country Life*, *The Burlington Magazine*, *The Connoisseur* and *Vogue*. His book on Scottish country houses open to the public was published in 1954. Now he is working on a full-length study of William Adam and his sons, based largely on unpublished MSS material. He is also engaged on a long-term project for a history of Italian sculpture from Bernini to Canova. *T. C. Barker* was formerly research fellow of Aberdeen University and became lecturer in economic history at the London School of Economics in 1954. *John Harris* was born in 1931. In 1951 spent a year in France studying the architecture and decoration of seventeenth century French chateaux. Since joining the staff of the RIBA library in 1956, he has been cataloguing the designs of Inigo Jones and Webb; preparing material for a work upon William Talman; and carrying out research for the Lincolnshire volume of the *Buildings of England*. *Michael J. Chandler* qualified after the war as a librarian and has been, since 1947, Assistant Deputy Keeper of the Records in the Corporation of London Record Office.

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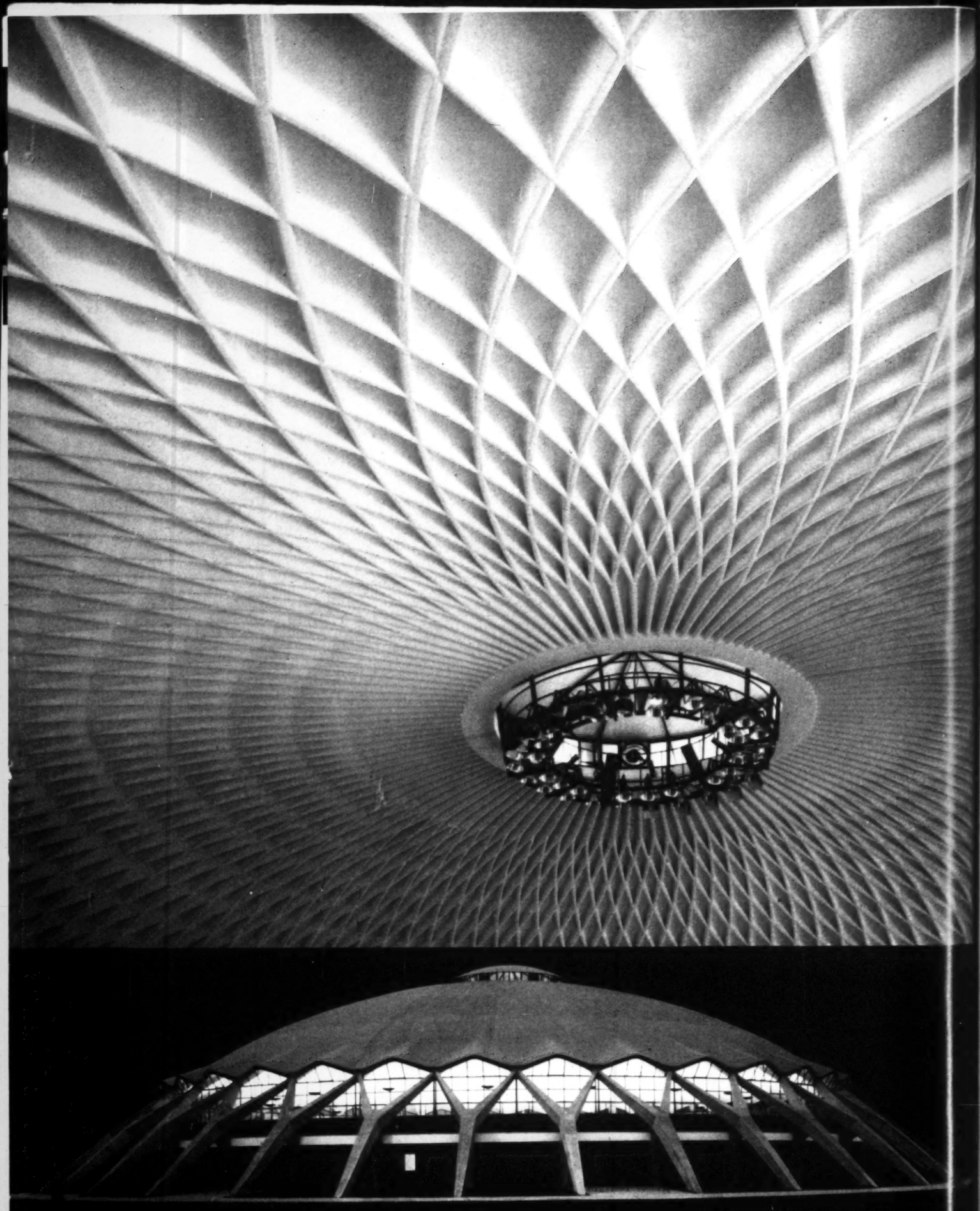
FIVE SHILLINGS



Most recent of the many notable concrete vaults designed by Pier Luigi Nervi, the Palazetto dello Sport is intended to house the indoor sections of the Rome Olympic Games, and is described and illustrated in Miscellany.

Marcus Whiffen

BISHOP BERKELEY

'But the ancients, who, from a thorough consideration of the grounds and principles of art, formed their idea of beauty, did not always confine themselves strictly to the same rules and proportions; but, whenever the particular distance, position, elevation, or dimension of the fabric or its parts seemed to require it, made no scruple to depart from them, without deserting the original principles of beauty, which governed whatever deviations they made.' Who is speaking? Many people, I expect, would guess Robert Adam. And indeed Robert Adam did write, in the Preface to Part I of the *Works*: 'The great masters of antiquity were not so rigidly scrupulous, they varied the proportions as the general spirit of their composition required.' And in the Preface to Part II he wrote that the proportion of columns 'depends upon the situation of these columns, whether they make parts of outside, or inside decoration, whether they stand insulated, or engaged, whether raised much above the eye, or level with it.' However, whereas Adam, treating 'of freedom in the use of entablatures,' maintained that 'a latitude in this respect, under the hand of an ingenious and able artist, is often productive of great novelty, variety, and beauty,' our author, in the sentence immediately following that quoted, continues: 'This latitude or licence might not, perhaps, be safely trusted with most modern architects, who in their bold sallies seem to act without aim or design, and to be governed by no idea, no reason, or principle of art, but pure caprice, joined with a thorough contempt of that noble simplicity of the ancients, without which there can be no unity, gracefulness, or grandeur in their works.' Unity, gracefulness and grandeur *versus* novelty, variety and beauty: clearly the historical context is different. Adam protested against the dull

pedantry of 'the race of those reptile artisans who have crawled about and infested this country for many years':[1] our author is protesting against the 'caprice' of the Baroque. In fact he was writing more than forty years before the first part of the *Works in Architecture of Robert and James Adam* saw the light; and his name was George Berkeley.

[1] In a letter to Lord Kames, quoted by A. T. Bolton, *The Architecture of Robert and James Adam*, London, 1922, I, pp. 50-54, from A. F. Tytler. *Memoirs . . . of Lord Kames*, Edinburgh, 1806, II, p. 50.

Bishop Berkeley—for so one thinks of him, though he was not consecrated Bishop of Cloyne until 1734—was born in 1685 and educated at Trinity College, Dublin, of which institution he was elected a Junior Fellow in 1707 and co-opted Senior Fellow in 1717. His three most celebrated works were published during his tenure of the Junior Fellowship—*An Essay towards a New Theory of Vision* in 1709, *A Treatise concerning the Principles of Human Knowledge* in 1710, and *Three Dialogues between Hylas and Philonous* in 1713. In October of the latter year, 1713, he left for his first continental tour, as chaplain to the Earl of Peterborough, who was bound, as Ambassador Extraordinary, for the coronation of the King of Sicily. As things turned out, Berkeley got no further than Leghorn this time; he was ten months abroad. No doubt this tour helped to form his taste in the arts, but it was of minor importance compared with the tour that he made as tutor-companion to George Ashe, the invalid son of the Bishop of Clogher. This lasted from the autumn of 1716 to the autumn of 1720. A part of the journal that he kept survives and has been published, and we can accompany him as he finds Italian gardens 'not so spruce and trim as those in France and England' but 'nobler and . . . much more agreeable,' as he visits the Pantheon, which 'the eye is never weary with viewing,' as he admires Bernini and Titian and, more surprisingly, Perugino. ('His drapering every one knows to be of little *gout*, and he knew nothing of the chiaro-oscuro. But for sweetness, grace, and beauty there is enough in this piece [the Barberini Holy Family] to render it admirable.') We can agree—again perhaps with raised eyebrows—when he says that 'the ancients had indifferent statuaries as well as the moderns,' and those of us who are not classical archaeologists can sympathize when he finds certain ancient ruins 'pretty unintelligible.' Then we can accompany him from Rome into Calabria, a *terra incognita* to the English of his generation, and from Rome to Naples and the Island of Ischia and back. Alas! we cannot accompany him on a part of his travels to which he refers in a letter written to his friend John Percival, Earl of Egmont, from Rome in July, 1718. Egmont is going to build a house, and Berkeley tells him that one of the causes of his longing to return to England is a wish to 'have a part in the contrivance of it'—

> 'For you must know I pretend to an uncommon skill in architecture, as you will easily imagine when I assure your Lordship there is not any one modern building in Rome that pleases me, except the wings of the Capitol built by Michel Angelo and the colonnade of Bernini's before St. Peter's. The Church itself I find a thousand faults with, as indeed with every other modern Church here. I forget the little round one in the place where St. Peter was beheaded built by Bramante, which is very pretty and built like an ancient temple. This gusto of mine is formed on the remains of antiquity that I have met with in my travels, particularly in Sicily, which convince me that the old Romans were inferior to the Greeks, and that the moderns fall infinitely short of both in the grandeur and simplicity of taste.'[2]

There is a seasoning of banter in the earlier part of that passage, but the man who was to institute the award of the Berkeley Gold Medal for Greek at Trinity College, Dublin, was surely in earnest about his enthusiasm for the Greek remains in Sicily. He had spent the winter of 1717–18 on that island, to which his first continental tour should have taken him but never did. Perhaps the journal he kept there contained comments on the temples at Girgenti. Perhaps it was a milestone in the history of European taste.[3] Almost certainly we shall never know for it would seem that it was lost at sea, in the Bay of Naples.

On his return to England apparently, though they could have met in Italy, Berkeley met Lord Burlington. Warton says that Pope introduced them, and that Berkeley gained Burlington's friendship 'by his profound and perfect skill in architecture.' In 1721 Berkeley's *Essay towards Preventing the Ruin of Great Britain* appeared. In it he mentions with approval the familiar Burlingtonian programme of 'the building a parliament house, courts of justice, royal palace, and other public edifices, suitable to the dignity of the nation,' but is inclined to think that it must wait upon better times; 'yet it come so properly into a discourse of public spirit that I could not but say something of it.' He also urges the founding of an Academy. This was to be a politico-literary institution rather than an academy of all the arts. (However, Berkeley's episcopal establishment at Cloyne was to be like nothing so much as a small version of the private academy maintained by Burlington in Piccadilly.)[4]

[2] Benjamin Rand, *Berkeley and Percival*, Cambridge, 1914, pages 171–172.

[3] His visit to Girgenti would have preceded that of D'Orville by nine years, and the publication of the temples by Pancrazi by fourteen. (See N. Pevsner and S. Lang, 'Apollo or Baboon,' *The Architectural Review*, civ, page 273.

[4] A contemporary wrote: 'Painting and music are no longer strangers to Ireland, nor confined to Italy. In the episcopal palace at Cloyne the eye is entertained with a great variety of good paintings, as well as the ear with concert of excellent musick. There are here some pieces of the best masters, as a Magdalen of Sir Peter Paul Rubens, some heads by Van Dyck and Kneller, besides several good paintings performed in the house, an example so happy that it has diffused itself into the adjacent gentlemen's houses, and there is at present a pleasant emulation raised in this country, to vie with each other in these kind of performances.' (Charles Smith, *The Antient and Present State of the County and City of Cork*, Dublin, 1750, I, page 146; quoted by A. A. Luce, *The Life of George Berkeley, Bishop of Cloyne*, London, 1949, page 179.) Berkeley took the painter John Smibert to America.

1. *Above, the Berkeley Gold Medal for Greek-first version, which he apparently designed himself.*

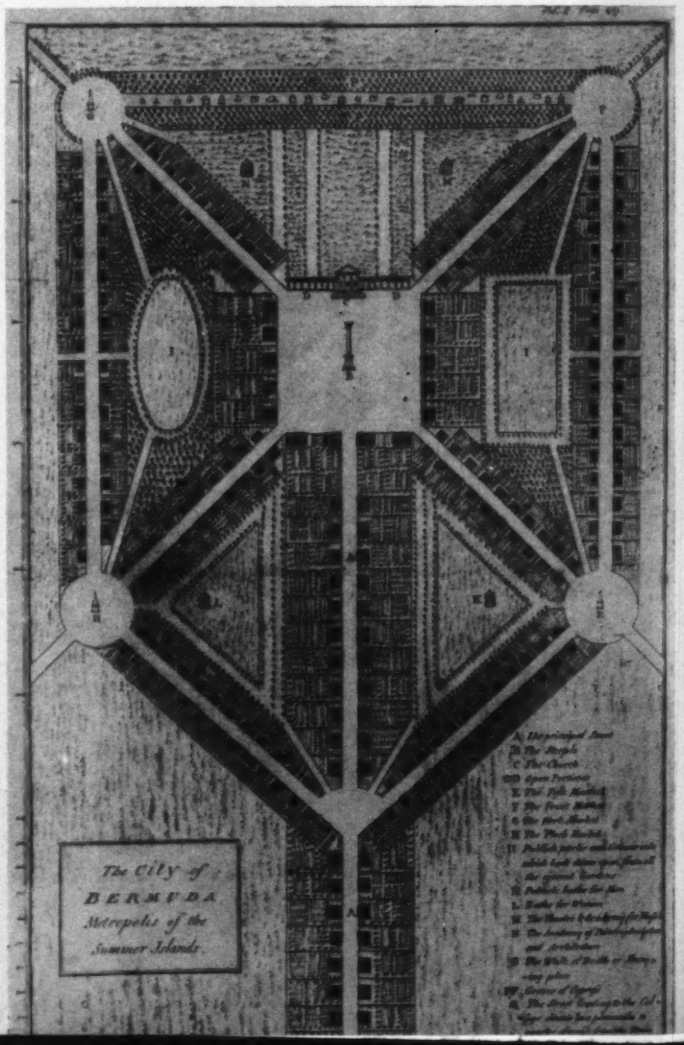
In 1722 Berkeley was consulted by Speaker Connolly about his vast new mansion, Castletown, outside Dublin. He did not make a design of his own for it, because (he tells Egmont) 'several have been made by several hands' and 'I do not approve of a work conceived by many heads.'[5] So he need not take much of the blame for what Mr. Summerson has characterized as the 'three-storey, thirteen window front of stupendous monotony.'[6]

It was in 1722, also, that Berkeley conceived the idea of the college in Bermuda, the scheme to which the next ten years of his life were to be dedicated and which took him to live, for two years and eight months, at Newport, Rhode Island. This is

[5] Rand, *op. cit.*, page 197.

[6] *Architecture in Britain* 1530–1830, London, 1954, page 228.

2. *Below, plan for the city of Bermuda with communal gardens prefiguring those of the twentieth-century garden city.*



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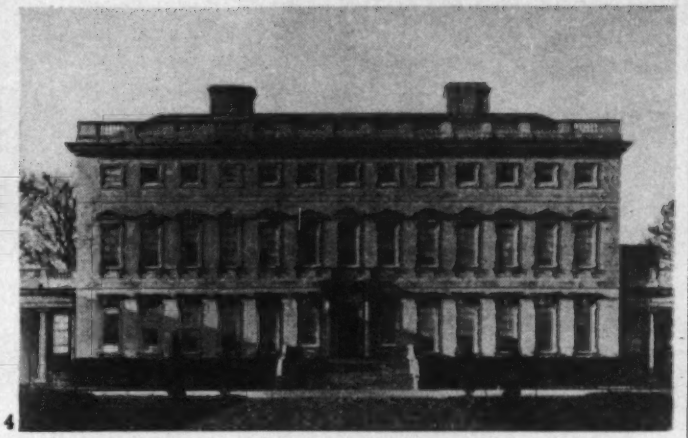


4

3. Whitehall at Newport, Rhode Island: a house that Berkeley built for himself and where he lived for two years and eight months while working on the plans for Bermuda. It was here that he wrote Alciphron. *4. Castletown, Dublin, Speaker Connolly's mansion upon the design of which Berkeley was consulted in 1722, though he made no designs for it.*

not the place to re-tell the story of St. Paul's College, Bermuda; suffice it to say that never can so much practical sense and worldly wisdom, attributes which Berkeley possessed in good measure, have been expended on a project which geography made so obviously impossible of realization. But the project does have considerable interest for the architectural historian. As everyone knows, neither the college, nor the town which was to be founded nearby—much as under Governor Nicholson of Virginia the town of Williamsburg had been founded near the College of William and Mary—got as far as architecture, any more than Berkeley got as far as Bermuda. Berkeley did, however, draw plans for both. As described by Berkeley's widow, the college plan, with its 'academical circus' of fellows' houses, its residential circus outside that, and its circus of shops and artificers' dwellings outside that again, seems to have been in some ways a forerunner of Ledoux's Ville de Chaux, as well as Jefferson's University of Virginia. In looking at the plan for the town published in the 1784 edition of Berkeley's *Works*, one is aware first of the sources of the design. The general layout recalls French garden plans, but perhaps was more directly inspired by the planning of Baroque Rome; the church, with an ambiguity typical of the architecture of the Burlingtonian circle, may be regarded either as a classical temple, or as a Corinthian version of St. Paul's, Covent Garden; the column in front of it, called 'the steeple,' is reminiscent of the idea James Gibbs never put into execution at St. Mary-le-Strand; the cemetery, or 'Walk of Death,' was of course suggested by the tomb-lined *viae* out of Rome, which Berkeley knew so well. But note, in addition to these tributes to the past, the communal gardens behind the houses. In England the communal garden did not in actual practice move out of the centre of the square, where it was islanded by carriage roads, until the 1830's.[7] And Berkeley's treatment of it prefigures even later developments in the garden cities and garden suburbs of the twentieth century.

The house that Berkeley built for himself near Newport and called Whitehall is perhaps his only executed work of architecture. Whitehall incorporates an earlier house; presumably the device of the half-false front door was forced upon Berkeley by the irregularity of its plan. The principal feature of the exterior is the Ionic doorcase, with its pulvinated frieze—very correct in the English Palladian fashion and utterly unlike the 'builders' Baroque' of the doorways of Richard Munday's Newport buildings, Trinity Church, designed four years before, and Colony House, designed ten years afterwards. However, Whitehall's main interest for us at present is an extrinsic one. It was here that Berkeley wrote *Alciphron* (published in 1732), from which I quoted at the beginning of this article.

Alciphron is a series of seven dialogues. Its purpose is sufficiently indicated by its sub-title: 'an apology for the Christian religion against those who are called free-thinkers.' Apart from a tribute to Lord Burlington in the second dialogue,[8] all the mention of architecture is in the third dialogue, sections 8 and 9. This third dialogue, in the words of its latest editor,[9] is an 'examination of the utility of free-thinking as represented at its highest (by Shaftesbury), namely, as the disinterested love of virtue, as altruism without religion.' How does architecture come into the argument? Well, Alciphron, the free-thinker, has been enthusing about the beauty of virtue. 'Is there upon earth,' he asks, 'a human mind without the idea of order harmony, and proportion?' Euphranor, his gentleman-farmer host, replies: 'O Alciphron, it is my weakness to be lost in abstractions and generalities, but a particular thing is better suited to my faculties, I find it easy to consider and keep in view the objects of sense: let us therefore try to discover what their beauty is; and so, by the help of these sensible things, as a scale or ladder, ascend to moral and intellectual beauty.'

The 'purity and serenity' of Berkeley's prose, the certainty and the precision with which his argument moves from one position to the next, the occasional flash of controlled wit—these are things that can only be experienced by reading the whole dialogue. Here I must confine myself to indicating some specially significant parts. Early on, Alciphron, who has said 'that beauty consisted in a certain symmetry or proportion pleasing to the eye,' is led to agree that proportion is 'different in different kinds of things.' 'The proportions of an ox would not be beautiful in a horse.'[10] At once we see the tendency of Euphranor's—and Berkeley's—argument: towards a functional aesthetic that shall be analogous to the functional ethic of Christianity with its system of rewards and punishments. Employing what I think may be recognized as an adaptation of a paragraph in Palladio's first book for his own purposes,[11] Euphranor gets Alciphron to admit that 'parts . . . in true proportions must be so related, and adjusted to one another, as that they may best conspire to the use and operation of the whole.' If that is so, then 'proportions are not, strictly speaking, perceived by the sense of sight, but only by reason through the means of sight,' and 'beauty is an object, not of the eye, but of the mind.' 'The beauty, therefore, or symmetry of a chair cannot be apprehended but by knowing its use, and comparing its figure with that use; which cannot be done by the eye alone, but is the effect of judgment. It is, therefore, one thing to see an object, and another to discern its beauty.' This was an important position for Berkeley, because one of his ultimate objectives was the disproof of a moral sense that needs must know the highest when it sees it.

So much for section 8. Section 9 illustrates the argument rather than develops it further—as indeed it hardly allows of further development. Euphranor first takes the subject of doors. 'The architects judge a door to be of a beautiful proportion when its height is double of the breadth.' However, make the breadth double the height and the door is no longer beautiful—because men walk upright. 'But if in any other part of the universe there should be supposed rational animals of inverted stature, they must be supposed to invert the rule for proportion of doors.' There follows a charming disquisition on dress, and then we return to architecture for the rest of the section. I can allow myself only one more excerpt, which follows a passage on the classical orders that looks back to Palladio and (dare one suggest?) forward to the Abbé Laugier:[12]

> 'And if we consider the graceful angles in frontispieces, the spaces between the columns, or the ornaments of their capitals, shall we not find that their beauty riseth from the appearance of use, or the imitation of natural things, whose beauty is originally founded on the same principle? which is, indeed, the grand distinction between Grecian and Gothic architecture, the latter being fantastical, and for the most part founded neither in nature nor in reason, in necessity nor use, the appearance of which accounts for all the beauty, grace, and ornament of the other.'

The passage that I quoted first follows soon after this; it is spoken by Crito, a 'gentleman of distinguished merit and estate, who lives in great friendship with Euphranor.'

It is now generally recognized that in the eighteenth century British writers played a leading part in the overthrow of the Renaissance tradition in aesthetic theory, with its postulate of a universal harmony in the works of nature that could be expressed in mathematical terms and which it was the business of the artist to reproduce. Hogarth, Hume and Burke are the names most often cited, and no doubt properly. However, Berkeley's attack on this tradition—which Hogarth, Hume and Burke all undoubtedly knew—has some special claims on the historian's attention: it preceded the others referred to by some years, it formed part of a general attack on the ethical theory of the third Earl of Shaftesbury, who was one of the last great upholders of the Renaissance tradition in the aesthetic sphere, and it was written by a personal friend of Lord Burlington. Can it be that the philosophy of the Burlingtonian circle and of English Palladianism was not so overwhelmingly Platonic and Shaftesburian as we are apt to think?

[7] See H.-R. Hitchcock, *Early Victorian Architecture in Britain*, New Haven, 1954, page 487.

[8] 'Crito . . . observed that he knew an English nobleman who in the prime of life professeth a liberal art, and is the first man of his profession in the world; and that he was very sure that he had more pleasure from the exercise of that elegant art than from any sensual enjoyment within the power of one of the largest fortunes and most bountiful spirits in Great Britain.'

[9] T. E. Jessop.

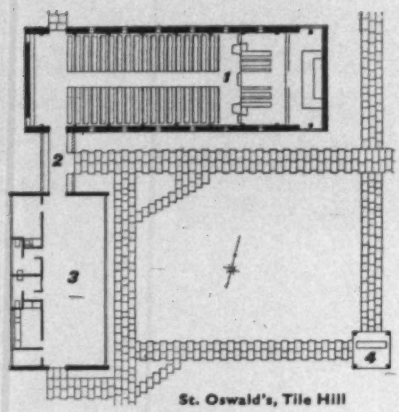
[10] *Cf.* William Hogarth, *The Analysis of Beauty*, London, 1753, page 15: 'Fitness of parts also constitutes and distinguishes in a great measure the characteristics of objects: as, for example, the race-horse differs as much in quality, or character, from the war-horse, as to its figure, as the Hercules from the Mercury.' Also Richard Payne Knight, *An Analytical Inquiry into the Principles of Taste*, London, 1805, page 169: 'The same relative dimensions, which make one animal beautiful, make another absolutely ugly.'

[11] 'Euphranor: And, to make the proportons just, must not those mutual relations of size and shape in the parts be such as shall make the whole complete and perfect in its kind?' *Cf.* Palladio (Ware's translation): 'Beauty will result from the form and correspondence of the whole, with respect to the several parts, of the parts with regard to each other, and of these again to the whole; that the structure may appear an entire and compleat body. . . .'

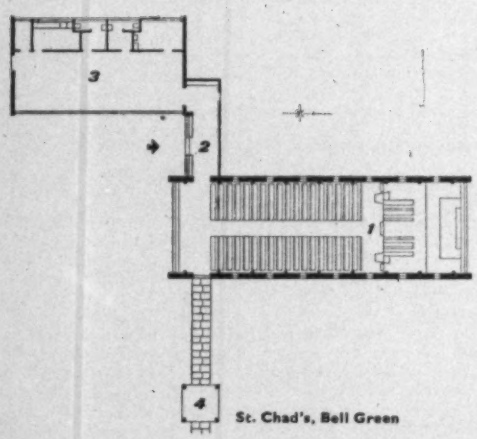
[12] I do not know that Laugier had read Berkeley's *Alciphon*, though it would be surprising if he had not. There is much in Laugier's naturalism and rationalism that must come *direct* from Palladio: for instance, he gives the same 'natural' reason as Palladio does for the tapering of columns, and both object to broken pediments for the same reason.

5. Portrait of Bishop Berkeley.

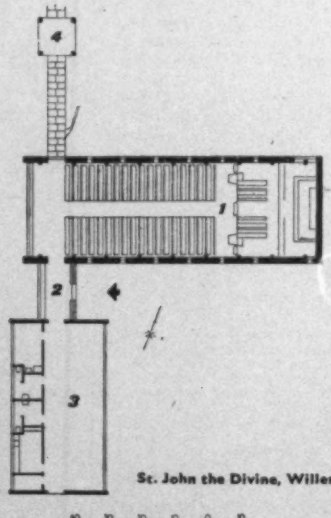
THREE CHURCHES AT COVENTRY



St. Oswald's, Tile Hill



St. Chad's, Bell Green



St. John the Divine, Willenhall

1, nave 3, church hall
2, porch 4, bell tower

The churches at Tile Hill, Bell Green and Willenhall were built to meet the new housing needs of Coventry. The cost of all three churches was met within the war damage grant for one church which had been bombed in the city centre. Basically the churches are reduced to four elements: nave, porch, church hall and bell tower and are arranged in different groupings on each site. The construction of the nave is based on an r.c. frame with a roof pitch of 14°. These frames are spaced at 10-ft. centres and the nave comprises eight full bays and two half bays at each end, making a total of 90 ft. The walls are 'No-Fines' concrete with a thickness of 1 ft. 5 in. and the same shuttering is used at each church. Precast concrete surrounds fixed in the shutter are used for the small windows in the north and south walls. The roof is framed in timber between the concrete frames and covered with aluminium on roofing felt, and insulation is provided below by the fibre board ceiling. A 6-in. over-site slab on hard core with a bituminous damp-proof membrane and a 2½-in. screed to take the electric heating cables is used for the ground floor.

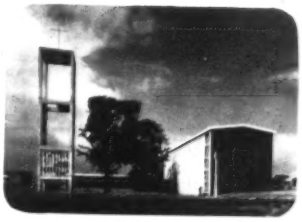
The porch is a small timber structure with hard wood louvres and glazed doors on the entrance side and opposite are cupboards backed by vertical cedar boarding. Brick end walls with constellated beams supported on tubular columns form the construction of the church hall. The long walls are clad with timber frames, glass and cedar boarding infill while the roof is framed on roofing felt and fibre board. Fair-face sand-lime bricks form the partitions, and the floor is constructed in a similar way to that of the church but with a 1½-in. screed and heating is provided by electric convectors.

The bell tower is a simple reinforced concrete frame consisting of 12-in. square vertical members with horizontal beams and a concrete roof supported by a cross-member which also takes a bell fixing. Some of the panels have an infill of 8-in. by 2-in. cedar slats supported at each end by brass rods with a pattern of stove enamelled metal trays screwed between at random. Two aluminium scaffold poles form the Cross on the tower.

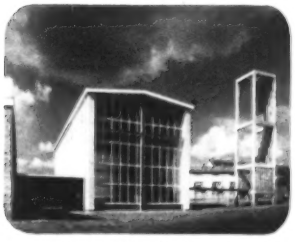
The external finishes on the walls of the nave are rendered with a colour stone aggregate, with the timber gutter and windows painted white and steel crosses black. Inside, the walls are painted white, and the concrete frame is untreated. The fibre board ceiling is painted in three colours, the pattern varying in each church. Generally the concrete tiles on the floor are black, with a mottled black aisle having a number of tiles reflecting the main colour on the ceiling. Along the north and south walls are electric heating panels.

African meranti is used for the entrance doors with aluminium door furniture. Large windows have ⅞-in. reeded glazing and clear glass is used on north and south windows. In the church hall the white sand and lime bricks are painted with a mauve mortar and left fair-faced, while the end walls are reddish brown sand-faced brick externally, with sand-lime internally. Ceilings are citron yellow with white cover strips, steel columns dark grey, timber frames pale grey with white opening lights and beads; boards are of varnished plywood with hardwood frames.

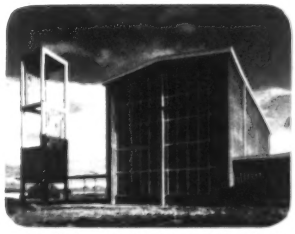
This is an example of collaboration from the outset between the architect and the contractors, the church being designed round the 'No-Fines' system of shuttered concrete. All details were discussed and agreed on beforehand in order to satisfy the cost stipulation.



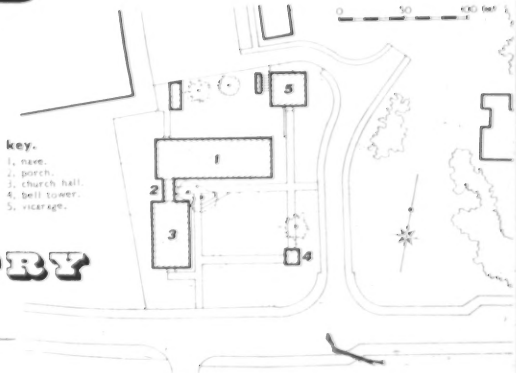
St. Oswald's, Tile Hill



St. Chad's, Bell Green



St. John the Divine, Willenhall



THREE CHURCHES AT COVENTRY

ARCHITECTS | **BASIL SPENCE AND PARTNERS**

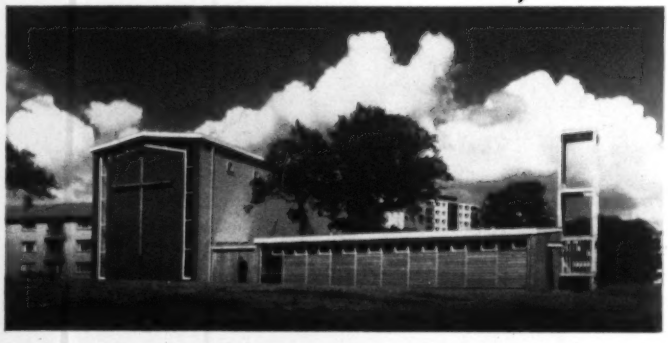
St. Oswald's, Tile Hill

1. St. Oswald's, Tile Hill, from the South, with the church hall on the left, and the free-standing bell-tower to the right.

2

2. the interior of St. Oswald's, looking toward the altar wall, which is lit by strip windows each occupying half of the last structural bay on either side. The mass-concrete walling is made flush on the exterior, but on the inside the portal frames stand proud of the wall and create both a legible structure and regular architectural rhythm of a sort familiar in Gothic parish churches.

This site is about four miles west of Coventry centre near the road to Berkswell. It is approximately rectangular within fifty yards of three 12-storey point blocks of the Tile Hill neighbourhood centre (illustrated in AR, July, 1956, pages 24-32). The three mature oak trees on the site have been preserved, and there is a slight fall in level from north to south.

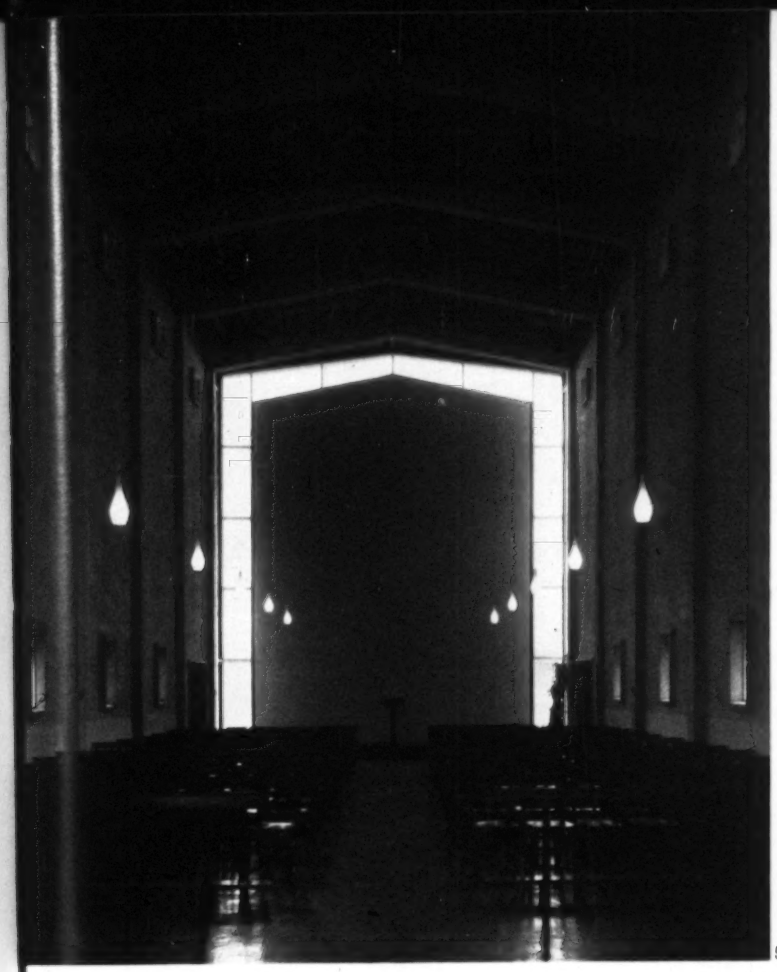


3

3. the west end of St. Oswald's, showing the back wall of the church hall and of the porch that links it to the church proper.

4

4. a crucifixion in repoussé bronze by Carroll Sims, mounted externally on the east wall to be seen from the road.



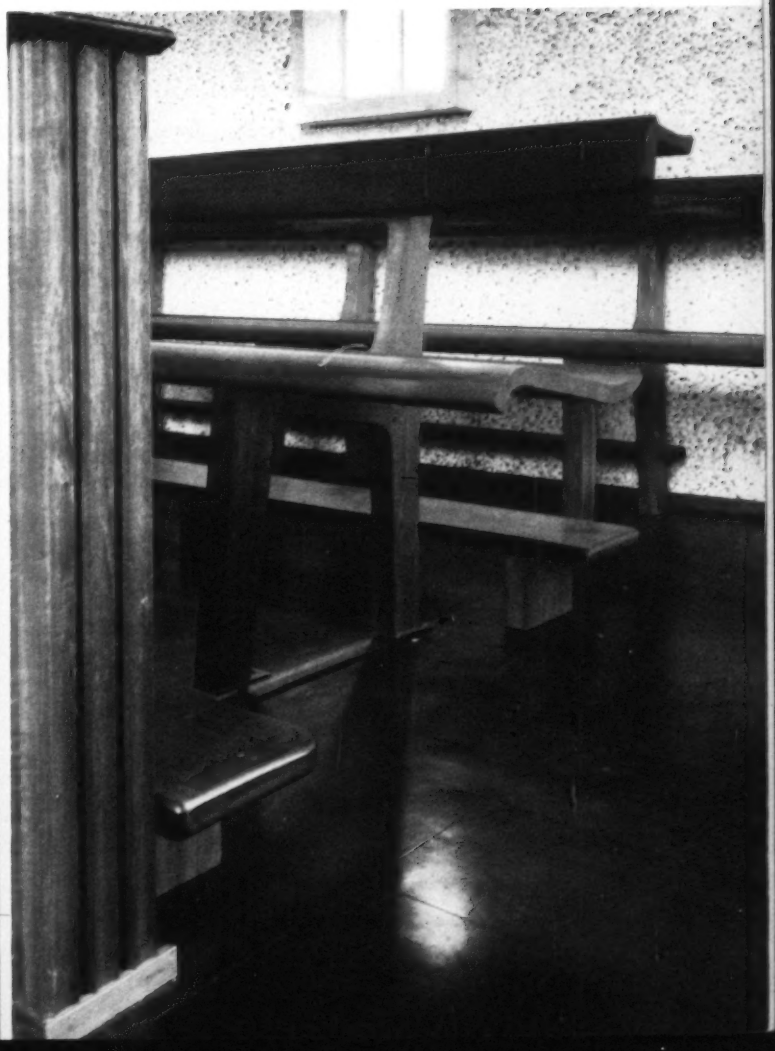
5

ST. OSWALD'S, TILE HILL

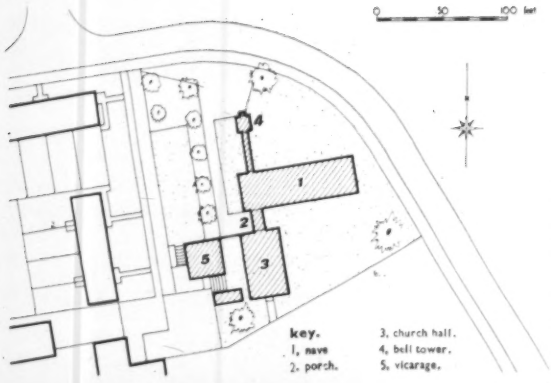
5. the font silhouetted against the west wall.
6. the altar-wall hanging.
7. the detailing of the choir stalls, which are similar in all three churches.

6

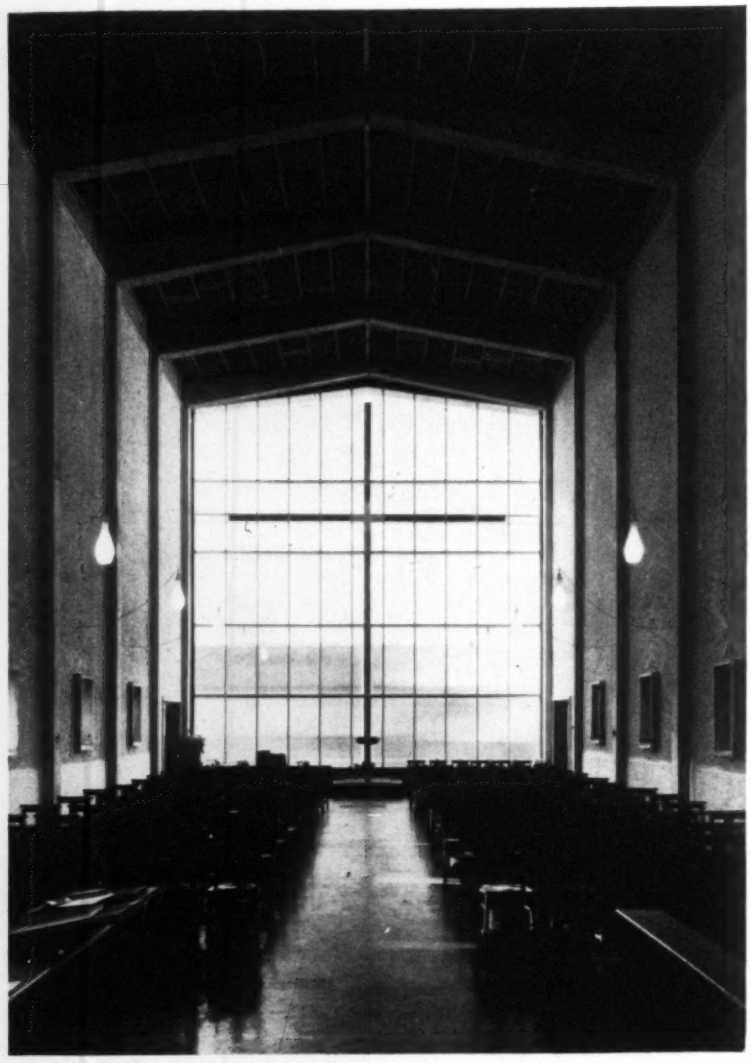
7



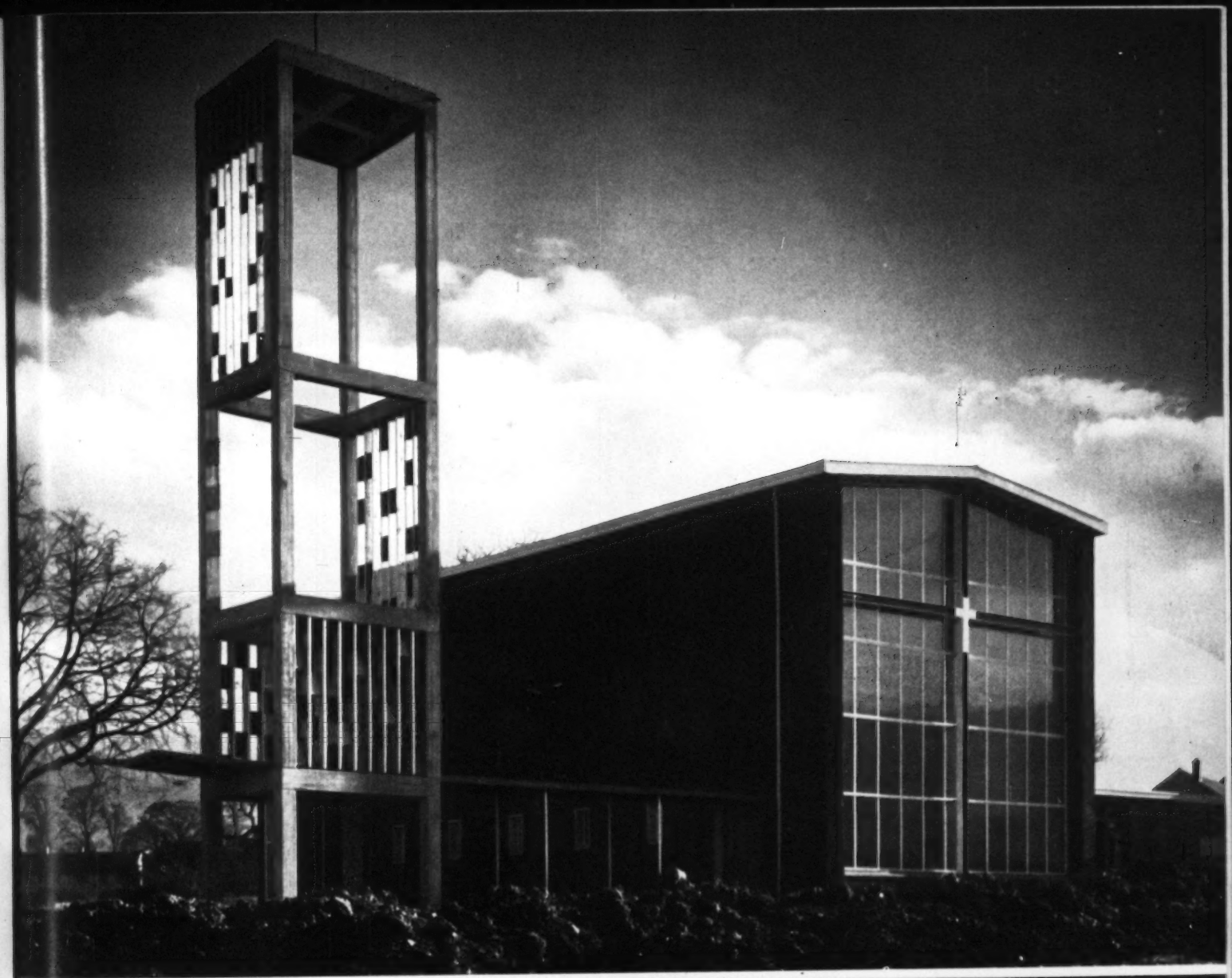
St. John the Divine, Willenhall

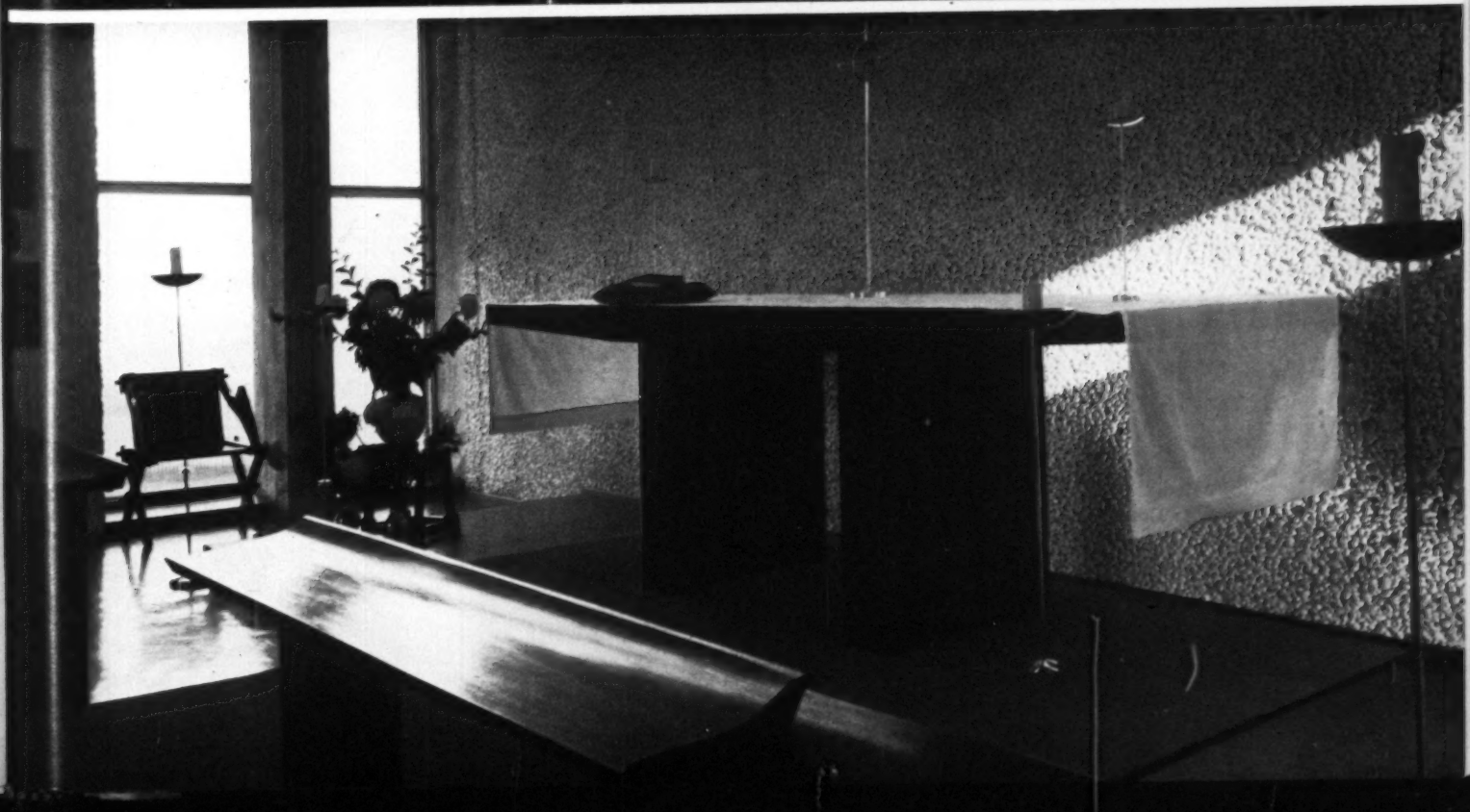


This site is two and a half miles S.E. of the centre of Coventry, near the main London road. It is roughly triangular in shape, with the main road leading to the neighbourhood centre sweeping round in a wide curve. The site forms one side of the main square of the neighbourhood centre and the ground falls towards the north-west.



8. the West end at St. John the Divine, Willenhall, is entirely glazed, the fenestration being braced by the external cross of RSJ's (seen also in 9, opposite). The extra light thus provided eliminates the need for 'clerestorey' windows like those at Tile Green, and only the lower range are provided here.
9, on the facing page, the Bell-tower at St. John's shows clearly how the infill slats and panels are used to give sufficient visual substance to what might otherwise have been too stark a structure. Here, as at Bell Green, the tower is not completely free standing, for its lowest storey forms the entrance to a covered way leading to the west end of the church.
10, the chancel of St. John's is lit on the south side by five small square windows that throw bars of light across the altar-wall, and by a tall strip window, like those at Tile Hill, on the North. This view also shows the marked contrast of the relatively massive forms of the altar, communion rail and other woodwork and the very fine-drawn quality of the metal appointments.

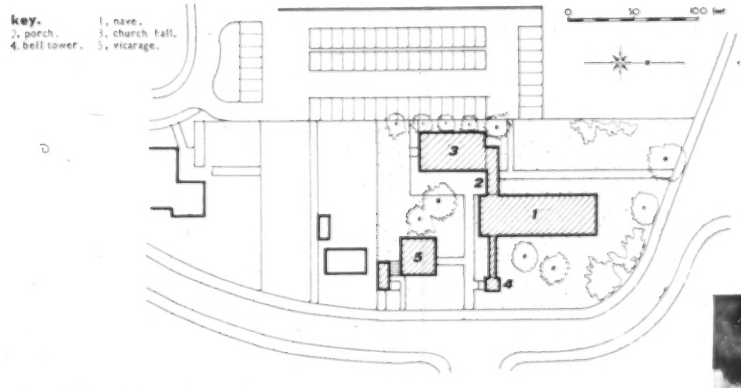




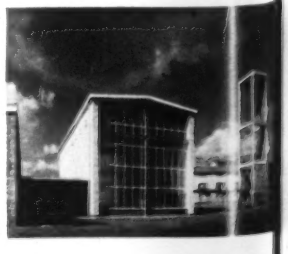
11

St. Chad's, Bell Green

11. St. Chad's, Bell Green, seen here from the south by night (and by day in 12, below) clearly shows the four basic standard elements in this view, including the entrance porch between the church and the church-hall at the left, and the additional element of a covered walk-way to the bell-tower at the right. The cross on top of the tower is of scaffold tubes.



Situated two miles N.E. of central Coventry, near the road to Bulkington, this site will form part of the Bell Green neighbourhood centre. It stands at the focus of three roads and there is a considerable fall in level from south-east to north-west.

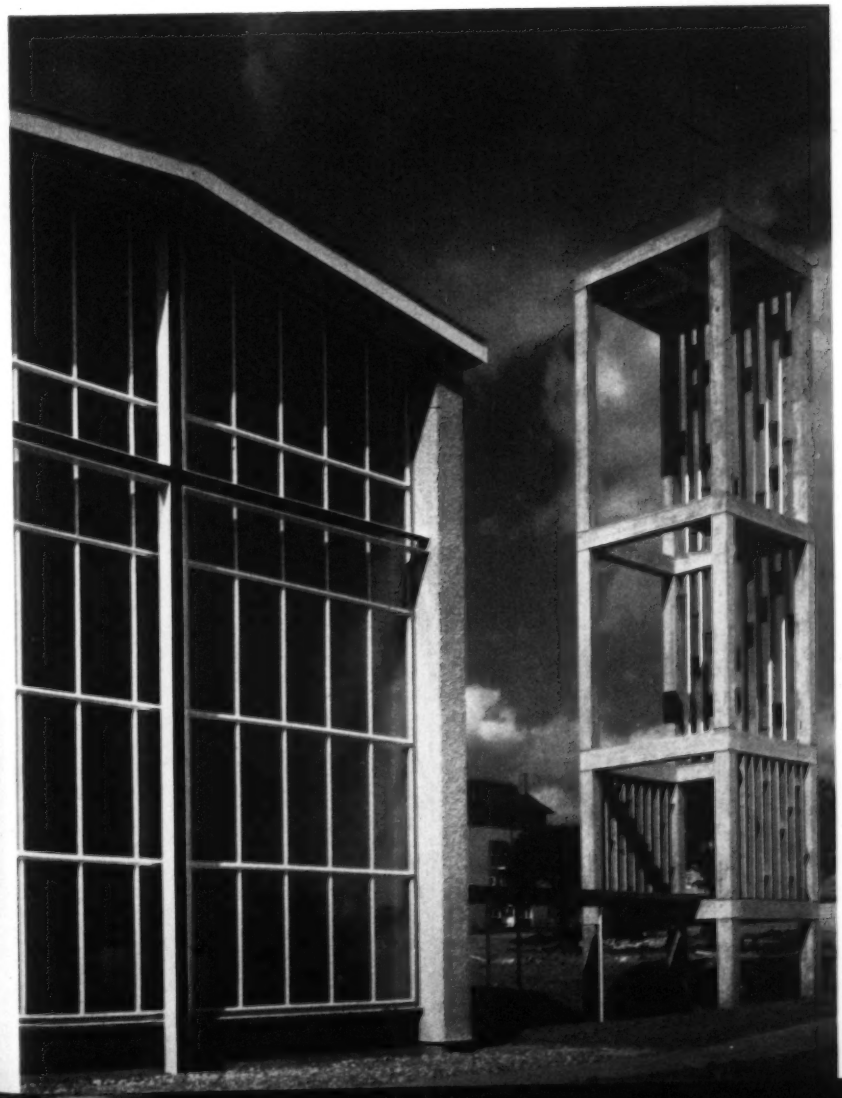


12

13. St. Chad's is not normally orientated and its liturgical east is, in fact, to the north; neither of its gable ends therefore faces morning or evening light. For the sake of better illumination both have been glazed, and a row of small windows provided in a clerestorey position.
14. the Tower at Bell Green is on the side nearer the main road, and also faces down another road opposite, hence the infilling of its two upper storeys is concentrated on that side, facing the approaching congregation.

13

ST. CHAD'S, BELL GREEN



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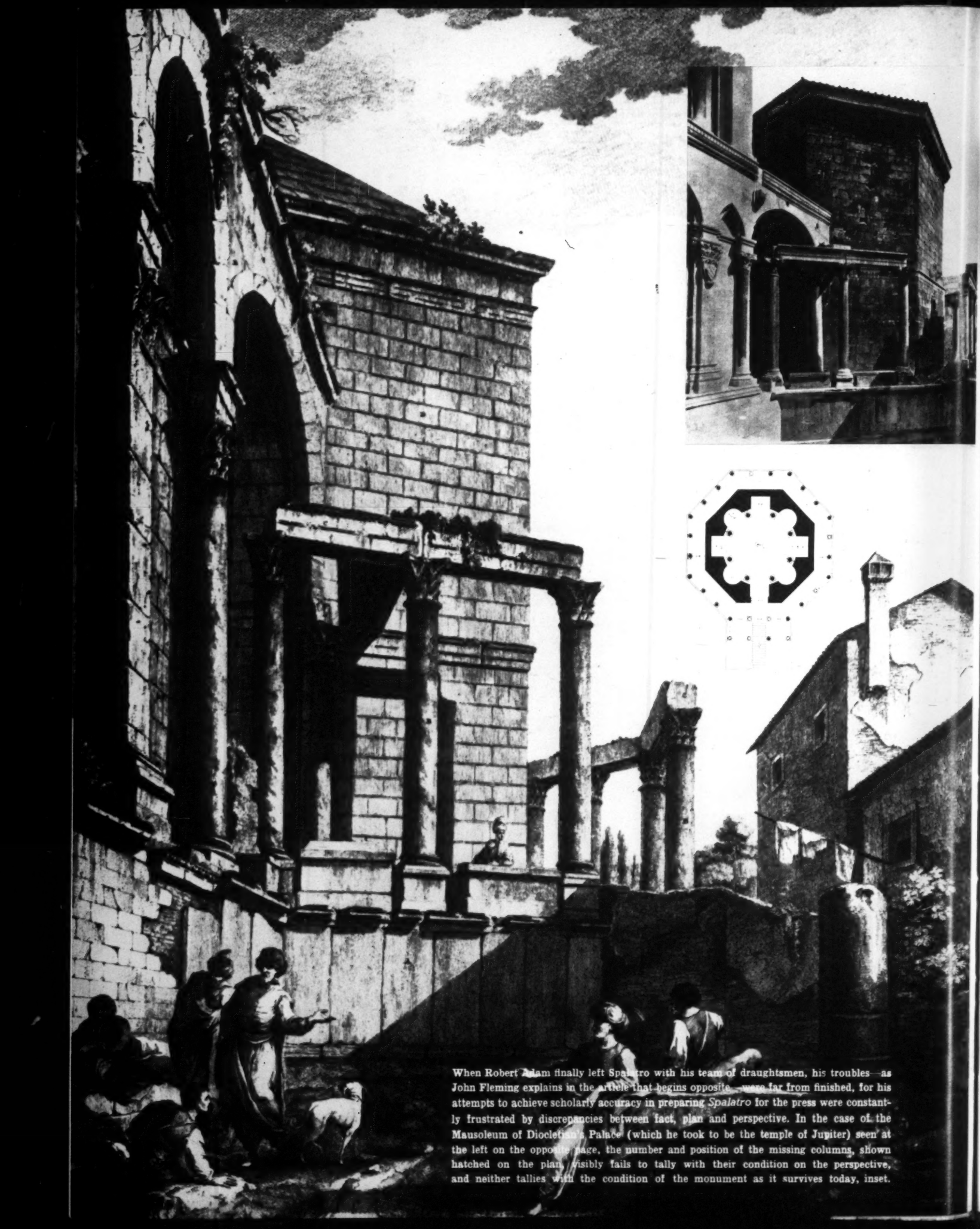
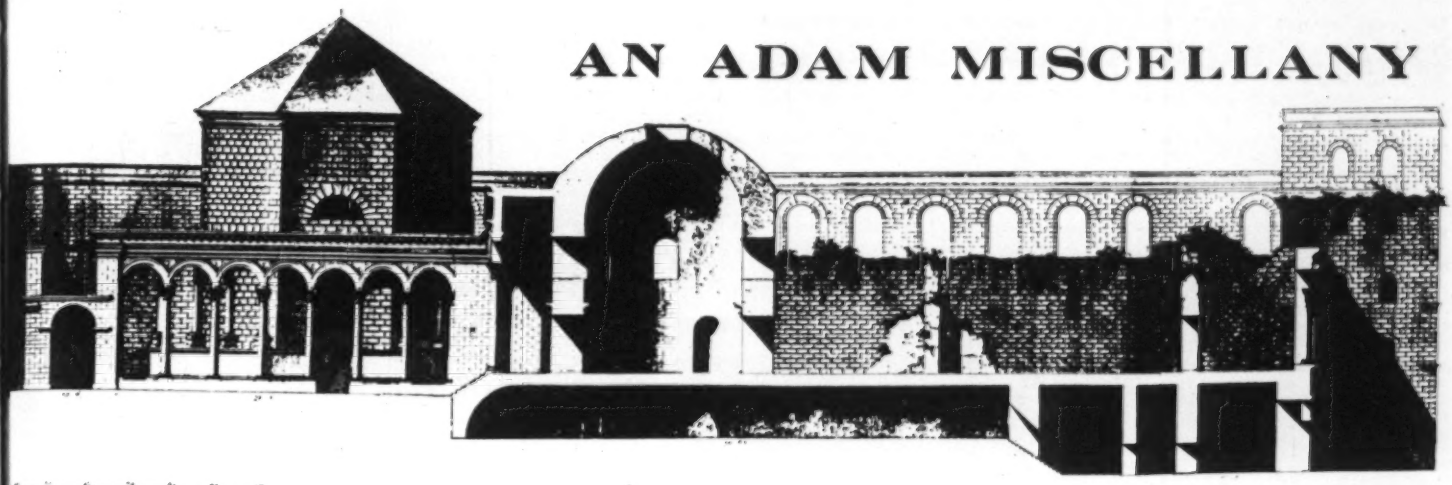


When Robert Adam finally left Spalatro with his team of draughtsmen, his troubles—as John Fleming explains in the article that begins opposite—were far from finished, for his attempts to achieve scholarly accuracy in preparing *Spalatro* for the press were constantly frustrated by discrepancies between fact, plan and perspective. In the case of the Mausoleum of Diocletian's Palace (which he took to be the temple of Jupiter) seen at the left on the opposite page, the number and position of the missing columns, shown hatched on the plan, visibly fails to tally with their condition on the perspective, and neither tallies with the condition of the monument as it survives today, inset.

AN ADAM MISCELLANY



the Palace from South to North

THE JOURNEY TO SPALATRO*

by John Fleming

In October, 1754, Robert Adam set off from Edinburgh on the Grand Tour and spent the next three years travelling and studying in Italy to prepare for the day when he would return home and launch himself as an architect in London. As astute as he was ambitious, the canny young Scot soon realized that the surest as well as the quickest way to establish his reputation in England would be by publishing some imposing folio. This would introduce him with a 'great puff,' he observed, 'conducive to raising all at once one's name and character.'† At Paris, in November, 1754, he was already looking out for engravers, seeking advice from Cochin,[1] who 'recommended a Mr. Babile[2] as a good man to do any ornaments for our books, etc., as having a genteel taste in that way.' And as soon as he reached Rome in the spring of 1755 he plunged into the world of architectural literature and polemics, hobnobbing with Piranesi, Robert Wood and his old Edinburgh friend Allan Ramsay, whose recently published *Dialogue on Taste* was to play an important part in the Graeco-Roman controversy.[3] The ingenious Mr. Wood, still basking in the fame of his *Ruins of Palmyra*, began by overawing the young Robert with his learning and then flattered him with friendly advice and encouragement, as did also the ebullient Piranesi who immediately offered to dedicate one of his engravings to him. Nothing, however, could affect Robert's shrewd estimate of his own capabilities and he was well aware that he would be unable to carry out any archaeological project unaided. Fortunately he had discovered at Florence a highly trained and knowledgeable architect and antiquary, Charles Louis Clérisseau,[4] whom he brought to Rome, installed in his palatial apartment above the Spanish Steps and adopted as his *cicerone* and drawing-master. He then acquired, at Rome, a staff of assistant draughtsmen—no fewer than six, some Italian and some French—whom Clérisseau trained and supervised.

Having thus marshalled his forces, the question of a suitable subject for a great folio presented itself. The first idea, which came to him 'in conversation with Wood and Ramsay,' was for a new and revised edition of Desgodetz's *Edifices antiques de Rome*[5]—to be adorned with fresh plates and corrected measurements printed in red ink!—'which lets them know the error,' he wrote (July 4, 1755):

> and this with a smart preface, a clever print of the author's head and an allegorical print in the way of Palladio and some remarks added to those of Desgodetz in different characters, could not fail to be of great authority and introduce me into England with an uncommon splendour. They could not miss to admire one who knew all the antiquities to an inch.

Not content with one ambitious project, however, he embarked simultaneously on two more: Hadrian's Villa at Tivoli and the Baths of Diocletian and Caracalla. He spent days clambering over the Baths with Piranesi and Clérisseau, 'haranguing and contriving the different uses of the different chambers, courts and halls,' and decided they would provide an excellent opportunity 'for examining and correcting on the spot' Lord Burlington's *Fabbriche Antiche* of 1730 in which Palladio's drawings of the Roman *thermae* were published.[6] Needless to say he 'found Palladio most faulty in many things and very unjust in his measurements, not so much in his plans as in the sections and elevations of which he has been very negligent and done many things by fancy where there were remains enough to point out the truth.'[7] His book on the Baths would be a great improvement on Palladio, he thought, and 'though I say it that should not, will be a most glorious work to which your Palmyras and Balbecks are less than nothing and vanity.'

These three projects, which incidentally provided a first-rate curriculum in architectural theory, kept Robert fully occupied during his first year at Rome; but eventually he began to realize the immensity of the task he had set himself. 'My project of Desgodetz,' he told his brother James on September 11, 1756, 'I was obliged to throw up, or lay aside, which you will. It was a work of years and I found retarded more material studies such as that of Hadrian's Villa and the Baths of Caracalla and Diocletian which are in a very prosperous way and I daresay will please you and take with the public.' His remaining six months at Rome were therefore devoted to these works and, by dint of steady application, he succeeded in completing them before his departure in the spring of 1757.

Meanwhile he had been considering further literary projects, this time of a more advanced, archaeological nature, and in a letter of July 24, 1756, he proposed examining Venice, Vicenza and Pola;[8] and then, on October 23, 1756, he mentioned, for the first time in his surviving correspondence, his intention of visiting Dalmatia. Only lack of money, he said, prevented him from going farther afield—to Calabria, Sicily and Greece, even to Egypt and the Holy Land[9]—and it is clear, from this and other letters, that the attraction of Spalatro lay in its easy accessibility from Venice rather than the style or structural qualities of this great monument of late Imperial Roman architecture. Despite his laudatory remarks in the preface to the book it would be a mistake to impute to Robert any preference for this period of classical architecture. His choice of Spalatro was made solely for practical reasons, it being the only unpublished site of major importance which he could afford to visit.[10] His first choice would have been Greece, 'that glorious country';

> to view the temples of Athens, of Thebes and of Sparta; the field of Marathon and the straits of Thermopylae, . . . to be where harangued Demosthenes, where fought Epaminondas and where Pericles counselled.

And in all this we may feel the influence of his friend Gavin Hamilton, that *éminence grise* of the neo-Classical movement,[11] who encouraged Robert, as he had Stuart and Revett almost ten years earlier, to go to Greece. Robert describes a dinner *chez* Hamilton at the Villa Lante on the Janiculum in March, 1757, when they 'talked of Arts and Sciences, of Greece and the Grecian islands which, if I had the cash, I would go and see with pleasure.' If only he could take Clérisseau and two draughtsmen, he said, 'we would finish very tolerable work to rival Stuart and Revett's in three months time and return home laden with laurel.' But it was not to be.

† Clerk of Penicuik Papers (by kind permission of Sir John Clerk). Unless otherwise cited all quotations are from this source. Spelling, capitalization and punctuation have been modernized.

[1] Charles-Nicolas Cochin (1715–1790). Robert had an introduction to his assistant John Ingram.

[2] Pierre-Edme Babel (1720–1761), engraved plates for the *Nouveau Vignole* (1747), Jeurat's *Traité de la Perspective* (1750) and Blondel's *Architecture Francaise* (1752–6).

[3] Published anonymously in the spring of 1755 as *The Investigator No.* 332. It appears to be extant only in the second edition of 1762. Ramsay thought it was directly responsible for Piranesi's *Della Magnificenza ed Architettura dei Romani* (1761). See M. Atholl Forbes: *Curiosities of a Scots Charter Chest* 1600–1800 (Edinburgh, 1887), p.199. See also John Fleming: *Allan Ramsay and Robert Adam in Italy* (The Connoisseur, March, 1956).

[4] Charles Louis Clérisseau (1721–1820). For a brief account of his relations with Robert Adam see John Fleming: *Robert Adam the Grand Tourist* (The Cornhill Magazine, Summer, 1955).

[5] Antoine Baruty Desgodetz: *Edifices antiques de Rome:* first published at Paris 1682, reissued 1695. An English edition was published at London by G. Marshall, 1771–1795; and an Italian edition by C. Fea at Rome, 1822. In 1843 G. Valadier published at Rome his *Aggiunte e correzioni all'opera sugli edifizi antichi di Roma dell'architetto Antoine Desgodetz.*

[6] In September, 1755, he asked David Wilson, bookseller in the Strand, to send him 'Lord Burlington's book of the Diocletian and Caracalla Baths' but Wilson could 'by no means find (it) for me.' He therefore had the family copy sent from Edinburgh to Rome.

[7] Letter to John Adam (November 26, 1756). Blair Adam Papers, quoted by kind permission of Capt. Charles Adam, R.N.

[8] No further mention is made of Pola but plans of the Amphitheatre, Triumphal Arch and Temple of Diana at Pola which are inscribed in Robert's hand 'measured on the spot July, 1757' (RIBA Library, Vol. 2/2B sheet 11), confirm that he went there on his way to Spalatro. Clérisseau also made drawings of the antiquities there and James Adam proposed having these engraved (August, 1760) for publication in book form. James Adam made an unsuccessful expedition to Pola in September, 1760.

[9] Unfortunately he does not say what he hoped to see in Egypt but it may be assumed that the classical remains would be the main objective. He may also have intended investigating Ancient Egyptian Architecture which, according to the somewhat Darwinian theories then prevalent, was believed to have been the precursor of Greek Doric. A taste for Egyptian Architecture as a style would have been very *avant-garde* in 1757. (See S. Lang and N. Pevsner: 'The Egyptian Revival,' THE ARCHITECTURAL REVIEW, Vol. 119, 1956.)

[10] On March 30, 1757, he described it as 'Domitian's Palace at Spalatro.'

[11] Gavin Hamilton (1730–1797). For his role in the early history of Neo-Classicism see Ellis K. Waterhouse in *Proceedings of the British Academy*, Vol. XL. Robert saw Hamilton in London in October, 1754, and it seems likely that he was then advised by Hamilton to go to Greece, for he wrote to his family (December 18, 1754) 'as to going to Greece, I may assure you I have not the most distant prospect or imagination of such a journey nor do I think the advantage of it would in any way answer the expense of time, money and hazards of it.'

* Spalatro—this is Adam's own spelling: it was usually spelt 'Spalato,' and is now known as Split.

He must content himself with Spalatro. And second-best though it might be as a subject for his next folio, he was reassured by the approval of such cognoscenti as Sir James Gray and Count Gazola[12], who recommended him to read 'a book delle Antichita de Salone vicino a Spalatro, composta da autore delle Comp. di Giesu.'[13]

In his last letter from Rome, dated April 24, 1757, Robert announced his intention 'to put over my trip into Dalmatia with all expedition.' Clérisseau and two draughtsmen, Agostino Brunias[14] and another known as 'Liegeois,' were to accompany him and he had equipped himself with a special trunk

> of a most enormous magnitude, a-purpose to contain all my drawings, sketches and studies; books necessary on the road; with all my habiliments and utensils of war. It is the astonishment and admiration of all who see it and cost me 7 good zecchins, which is about 3 guineas and a half.

On July 1 he announced his arrival at Venice and immediately called on Consul Smith to 'obtain allowance from the Republic for my digging at Spalatro, . . . and to procure me letters for Governors, etc.' Fortune seemed to be smiling on him—'as if God was always puzzling his old noddle how to oblige me,' he said—for he now heard that his countryman, General William Graeme, of Bucklivie,[15] who was Commander in Chief of the Venetian Land Forces, would be reviewing his troops at Spalatro and, remarked Robert cannily, 'I daresay he will desire me to live with him whilst there and eat every day at his table.' On the day he wrote this letter, July 6, 1757, he had chartered a ship and, as he explained to his perhaps rather apprehensive family, had instructed the skipper to 'coast it all the way and lie ashore every night;' and was busy

> laying up stores of wine, bread, tea, sugar, tongues, hams and other necessaries for gentlemen voyagers and expect to have a very pleasant trip of it. It is true the weather is rather too hot, but our boat is to have a double canvas over it so that we shall be in a kind of room all the way and we carry beds and sheeting and other apparel.

But Robert was undaunted, spurred on by the thought that 'this jaunt to Dalmatia with my four people, makes a great puff even in Italy and cannot fail doing much more in England.

'The 11th of last month I set sail from Venice,' he wrote to his brother James from Spalatro on August 6:

> I arrived the 22nd in good health, as were also my fellow travellers. Since that time till this day I have been employed in considering the antiquities of this place, which I hope will prove a work very acceptable to the public as it is different from all other things yet published. I have met with many stoppages in my operations here by means of a wrong-headed Governor, but General Graeme took my part with great warmth and I hope now all difficulties are removed and that in 8, 10 days or at most a fortnight, I shall be ready to depart for Venice with all my operations in my pocket. The people are vastly polite, everything vastly cheap, a most wholesome air and glorious situation. Beef sells at one half-penny per pound weight, fowls at 2½d. each and a hare at 3d. And indeed all eatables are cheap in proportion, so that for £50 per annum 10 people may live like princes. It will cost me nevertheless some cash, as I have had to hire furniture from the Jews to furnish my house, which was nothing but bare walls, as there are no Inns, nor furnished lodgings to let here—for love nor money. We have a company of Comedians from Venice and have a play every evening. I dine with the General almost every day, who encloses this letter in some he is sending express to Venice. I just take this opportunity to assure you all of my welfare and to let you know that I shall write you more at length on my return to Venice. I must have done. God bless you all eternally and may the Saving Grace of the Madonna be on you all. I forgot to tell you that they have carried the Madonna in procession 8 days through the streets for love of rain which has not yet come. And all the Comedies and other diversions have been stopped during that Holy Ceremony. The ladies here are generally very handsome, with fine complexions, and dress well. But it is difficult to see them, not being time of the Carnival.

His hopes of returning in under a fortnight, with all his operations in his pocket, proved over sanguine for he did not leave Spalatro until August 23, reaching Venice on September 11.

We may surmise that Clérisseau and the draughtsmen were then set to work immediately on preparing 'finished drawings' for the projected book—but this must remain a surmise for all Robert's letters to his family written between August 5 and November 17 have unfortunately disappeared. (They were probably returned to him next year when he was collecting material for the text of *The Ruins of Spalatro*.) From two brief notes to his London agents,[16] however, we learn that Robert spent the last weeks of September and the first two of October in sight-seeing at Venice, Verona and Vicenza, from where he and the two draughtsmen began the first lap of their long journey to London. Clérisseau returned to Venice to supervize the engraving of the Spalatro drawings.

Not all the drawings were to be engraved at Venice, however, for in a letter from Augsburg (November 17) Robert remarked on:

> the numbers of engravers . . . and the cheapness of their work. As we may sometime have work to be done and books to be published I am to reconnoitre these youths with some exactitude, which I don't look upon as a useless piece of knowledge as I have no notion of paying £20 in England for what will be done as well here for 20 shillings.

A month later he proposed spending a week or two at Amsterdam 'in order to finish what drawings are not yet completed, which may be necessary to show in England. I mean those of my Dalmatian trip.'[17] And on January 17, 1758, he was at London. 'I was very lucky at the Custom House at Harwich,' he reported, 'where the Collector, who is a virtuoso and lover of drawings, by seeing mine let me pass everything free, which otherwise must have cost me at least £10 or £12 sterling.'

Two sets of finished drawings for *The Ruins of Spalatro* appear to have been made—few if any of them by Robert. (His conception of his role as leader of the expedition is indicated by his remark, quoted above, that he had been 'employed in considering the antiquities' of Spalatro.) The original set was largely, perhaps entirely, drawn by Clérisseau[18] and the duplicates perhaps also by Clérisseau or, more probably, by Brunias and Liegeois.[19] Very few of either set can now be traced. There are five among the vast collection of Clérisseau's drawings in the Hermitage at Leningrad.[20] A drawing of the Porta Aurea[21] is in the RIBA Library.[22]

These were no doubt among the hundreds of drawings proudly displayed to James Adam when he came down from Edinburgh to London in January, 1758, to welcome Robert home. A remark in James's first letter from London (February 1)—'Bob designs to make his first work the Ruins of Spalatro'—reveals that he still hoped to publish his Baths, Hadrian's Villa and even the Desgodetz.[23] As regards Spalatro he

[12] Sir James Gray (d. 1773), Envoy Extraordinary to the King of Naples and the Two Sicilies, 1753–61. With his brother, General Gray, secretary of the Society of Dilettantes, he was instrumental in forwarding Stuart's expedition to Greece. Conte Gazola, of Naples, was closely connected with the discovery and publication of Paestum. See S. Lang: *The Early Publications of the Temples at Paestum* (J. of the Courtauld and Warburg Institutes, Vol. XIII (1950).

[13] *Illyricum Sacrum*, by D. Farlato (Venice, 1751), contains four chapters on Diocletian and ends with a section, *Marmora Salonita*, by Francesco Antonio Zacharia. Robert bought a copy in Italy. James Adam remarked (June 25, 1758) that Robert expected 'much information from Illirica Sacra.'

[14] Agostino Brunias (Brunais or Brunace). Painter and prizewinner at the Accademia di S. Luca, 1754. See Thieme-Becker; and Edwards: *Anecdotes of Painters* (1805), page 65. I hope to deal with him more fully in my forthcoming book on the Adams.

[15] General Graeme (d. 1767). Robert met him at Tournay in 1754. Graeme was appointed to Venice in 1756. See Louisa G. Graeme: *Or and Sable: A Book of the Graemes and Grahams* (1903), 427, 428, 430. His correspondence with Lord Bute (Bute Papers at Mount Stuart, Cardiff Public Library and British Museum) unfortunately contains no reference to Robert Adam at Spalatro.

[16] Letters to Messrs. Innes & Clerk of September 23, 1757, from Venice (*Guildhall Library MSS.* 3070, *SR.*21.6) and of October 12, 1757, from Vicenza (*National Library of Scotland MSS.* 590, *No.* 1606).

[17] The Liegeois had gone to Liége to see his family and was to rejoin Robert and Brunias at Amsterdam—hence Robert's wish to go there in order to finish the Spalatro drawings.

[18] Clérisseau's authorship of all the perspective views and perhaps other drawings as well is revealed in Adam correspondence of 1760 quoted below.

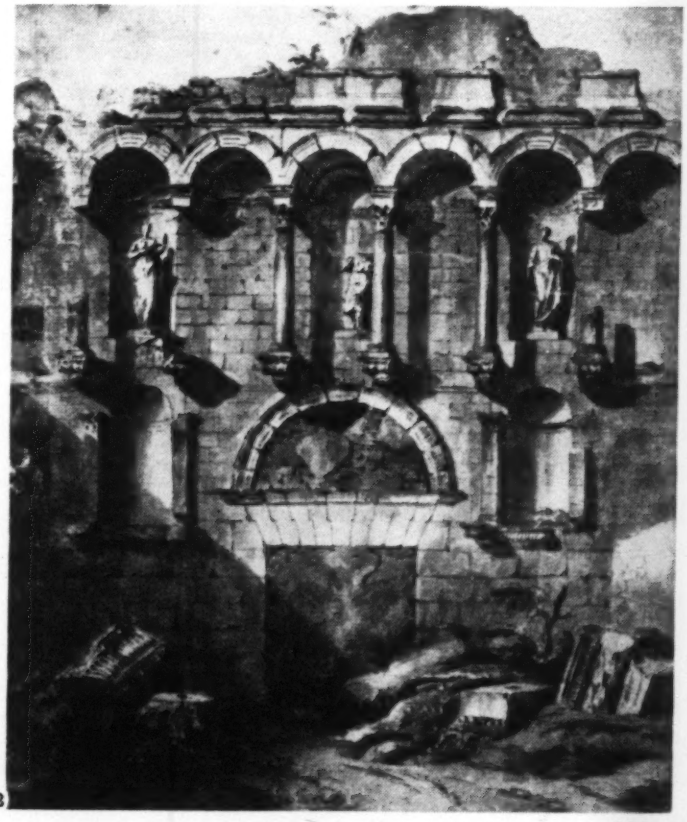
[19] Several architectural paintings and drawings by Brunias were included in the Adam sale at Christie's in 1785, when they were described as being 'in the style of Clérisseau.'

[20] These are for Plates XX, XXII and XLII of *The Ruins of Spalatro*. Two other drawings, depicting the interior of the court and the interior of the Temple of Jupiter, were not engraved. I am greatly indebted to Thomas J. McCormick Jnr. for this information. He has examined the Clérisseau drawings at Leningrad and has most generously allowed me to reproduce three of his photographs of them.

[21] Engraved as plate XII in the book.

[22] RIBA Library No. B5/4. Sepia ink, pen and wash. It differs slightly from the engraving by Santini. See *RIBA Journal* (13 April 1929), p.437. A drawing in the Witt Collection (No. 3186) is attributed to Clérisseau and described, erroneously, as "View of the Palace of Diocletian, Split." See *Handlist of the Drawings in the Witt Collection* (1956), p.136.

[23] The Hadrian's Villa project was not pursued. The history of the other two projects may be summarized. November, 1758, Robert told Clérisseau to instruct Zucchi to go ahead with engraving for the Desgodetz. July, 1760, James Adam reported from Venice that Zucchi had done 'two capitals of Desgodetz that are, I think, the most perfect things I ever saw in that style.' At same date James proposed engraving drawings of the *thermae* for publication in two volumes at 3 guineas each. Robert stopped this (July 24, 1757), reporting that Mrs. Irvine (wife of the Pretender's physician) had issued Proposals for a book on the Roman Thermae and had obtained only 30 subscriptions. Robert recommended Desgodetz. Paul Sandby had told him 'that's the book. Every clap of men want it. Only think of the tribe of architecta, carpenters, joiners, &ca., about London who would wish to read Desgodetz if he was in English, and can read no French. Haydon said to me, when he was puzzling at Desgodetz, that a man that translated that book into English would make his fortune.' Robert projected an edition in French, English and Italian. The project was later abandoned, perhaps on hearing of G. Marshall's edition



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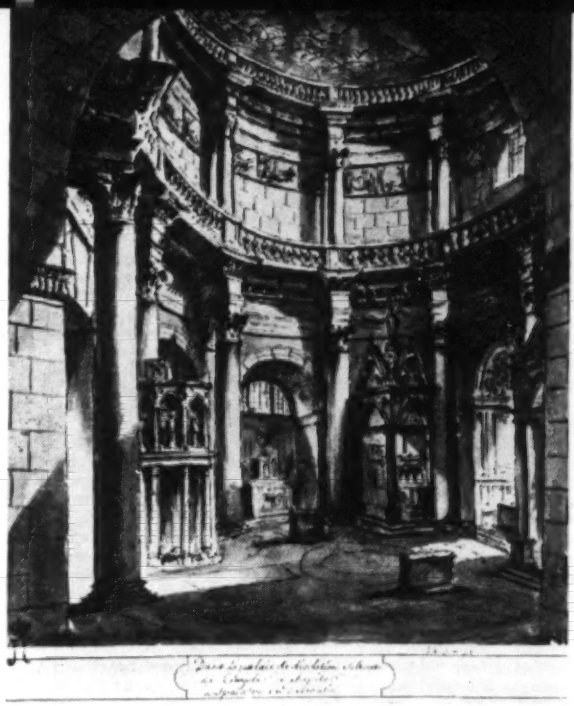

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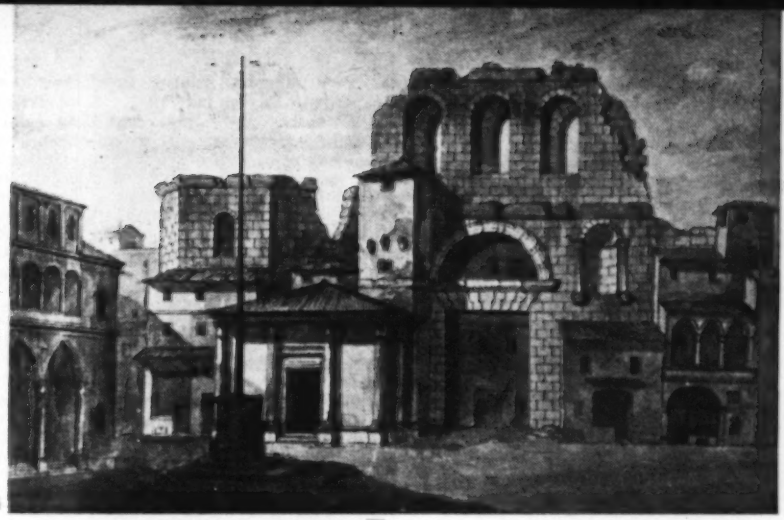

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Of the numerous drawings apparently prepared by Clérisseau for Robert Adam's Spalatro, *but never credited to him in the book when it was published, one—of the Porta Aurea* 2*—is among those from his hand in the RIBA library, and five are among the vast body of Clérisseau material in the Hermitage, Leningrad. Three of these are published here for the first time: a small sketch of the interior of the Temple of Jupiter (actually the Mausoleum)* 3*, including the rustication that caused so much later dispute; and two larger and more carefully prepared drawings, of the Porta Ferrea,* 4*, and the great Atrium,* 5.

was confronted with an immediate and somewhat awkward problem. As James put it (February 1):

> 'tis necessary to have an introduction wrote, giving a history of the place, its commerce and inhabitants, likewise some sketch of the life of Diocletian the builder of the place. This task he (Robert) finds himself unequal to, both from want of languages to consult the best authorities and from want of time. However he would not wish to let the world know that this was done by anybody but himself. In casting around to think who could best conceal it, Mr. Drysdale occurred as a proper hand.[24] The great objection was his indolence and that he would not undertake it and 'tis on this score we should wish to have your (his sister Nelly's) opinion. If you thought he would apply so long as to do as small a thing of that kind, either for love or money, I should write him about it and send him all Bob's remarks and authorities and I should think he could be repaid by a genteel present of £50 or £60 value, besides Bob's interest in any future events.

His misgivings about John Drysdale evidently proved correct, perhaps fortunately, for Robert later prevailed upon his cousin William Robertson, the eminent historian and inspirer of Gibbon, to write the text.[25] 'I cannot express my surprise and admiration for Willie's preface,' confessed Robert on November 1, 1759:

> it is beautifully said and in a few words contains the full sense of what would have taken many pages from any other historian of this age but himself. If anything can make me think more highly of his abilities than I did from his History, it is the masterly penning of my preface. I have made bold to mark on the margin of it some observations, which I think it will be necessary to consider. They are mostly in points of fact.

Robertson's collaboration is of the greatest importance, for it extended far beyond the mere wording of the Preface. His lucidity, his scholarly detachment and, above all, his passion for scrupulous accuracy and constant recourse to documentary evidence, were to influence Robert profoundly. Henceforward, any tendency on the part of Clérisseau, the draughtsmen or the engravers to stray from the measurements and other archaeological evidence collected on the site, was to be severely curbed by Robert. And already in November, 1759, Robertson's influence may be felt in Robert's comments on his rivals:

> I am not for praising the taste of W(oo)ds work. The greatest connoisseurs here are of my own private opinion that Taste and Truth, or as W(illi)e terms it, Accuracy, are not the characteristics or qualifications of these works. They are as hard as iron and as false as bell.

And he concludes by begging James to 'send Willie (Robertson) a present of 10 dozen of Maxwell's best claret on my account.'

But this is to anticipate. In the early spring of 1758 the principal task was to 'push on,' as Robert said, with engraving the plates and by the autumn Michael Angelo Rooker had been commissioned, together with Paul Sandby who was to put in the 'Rusticks.' This promising arrangement soon came to grief. 'Sandby has lately quite dispirited me,' said Robert (September 5, 1758), 'by telling me that Rooker was such an idle worthless fellow that he would do nothing and that he was going to leave him directly, for that now the plays begin he will never work an hour in a fortnight.' (Rooker was a scene-painter at the Haymarket Theatre.) He was able to give a more encouraging report on December 12, however:

> the front is near finished by Paton and the figures by P. Sandby. The inside of the Temple of Bacchus by Paton and the front to the sea and in ruins near finished by Walker.

Meanwhile engraving was going ahead at Venice under Clérisseau's supervision and on September 5, 1758, Robert sent James, then at Edinburgh, 'the last proof which Clérisseau sent me of Spalatro. Look at it and return it,' he wrote, 'I think it best you should show it to few

though this was not published until 1771. Many engravings were made for the Adam edition of Desgodetz and the Adam firm's accounts for 1772 (Blair Adam Papers) contain the entry: 'By Work of Desgodetz for the cost of it—£817 4s. 7d.' (probably an estimate, and an exaggerated one, for the accounts were drawn up for the benefit of creditors, following the Adelphi disaster). Lot 108 in the Final Sale of the Effects of Robert Adam in 1821 contained 'A set of 14 prints of Roman Antiquities, intended by Mr. Adam as a work correcting that of Desgodetz (unpublished).' Lots 109–129 contained '138 ditto.' An undated book-list, probably of 1823, advertised as shortly to be published 'Architectural Remains in Rome, Pola ad Naples, from drawings made by Clérisseau, under the direction of the late Robert Adam, Esq., F.R.S., F.S.A., Architect to the King.' These were to include, *inter alia*, 'Several drawings of Corinthian Columns, Entablatures, &ca., which were collected by Mr. Adam for elucidating the history of the most elegant of the orders of Architecture, and for correcting the errors of Desgodetz.' (See A. T. Bolton in *Trans. Bibliographical Society*, Vol. XIV, 1915–17, pages 306–7.) Clérisseau mentions the Desgodetz project on page 13 of his introduction to his *Antiquités de la France*, Vol. 1 (1778).

[24] John Drysdale (1718–1788), Scottish Divine, married Robert's sister Mary Adam.

[25] William Robertson (1721–1793). Leapt to fame on the publication of his *History of Scotland* in February, 1759. He wrote the Preface, Dedication and Proposals for *The Ruins of Spalatro*. He may also have helped with the descriptions of the plates. He stayed with Robert at Lower Grosvenor Street in September, 1760, which James described as an opportunity 'very favourable for getting the finishing stroke put to the Preface, &ca.'

people as it needs some corrections.' Disquieting news arrived from Venice in November, however. Bartolozzi was becoming truculent in his demands for money[26] and even Clérisseau was threatening to move to Florence, where the living was cheaper, and leave the Venetian engravers to their own devices. Robert instructed his agent at Venice, the Scottish merchant Mr. Duff, to pacify them and expedite matters—'and as soon as I hear something certain about the plates,' he told James,

> I shall send you the paper of Proposals[27] but till then wont have a farthing from anybody. Nor can I begin laying the specimens before the people here till I have a perspective view to put amongst the geometrical.

The Ruins of Spalatro seems to have remained in this somewhat unsatisfactory state until James left London for Venice in May, 1760, undertaking, as from that date, the main responsibility of seeing the book through the press. His first reports were encouraging. At Paris he made a useful contact with the bookseller Praulte[28] and as soon as he reached Venice, on about June 25, he sent Robert his first Progress Report. A few of the copper-plates were already on their way to London, he wrote, and Clérisseau reckoned that 'we shall get all finished in about 3 months' provided they both stay on at Venice and keep an eye on the engravers.[29] James decided to have more plates engraved at Venice than had been originally intended. 'Let Bob know,' he wrote (July 2, 1760), 'that I have given the two sections and front of the Vestibulum to Zucchi, that his price is 30 zecchins for each of the sections and 20 for the front. I should like to know how this is by what would have been demanded at London. I think 'tis high but there is no comparison of the work.'[30] At the same time he returned proofs of the plates engraved at London with Clérisseau's criticism and notes for re-touching. Clérisseau thought them 'better than expectation, but not near so well as his Abbé's,[31] which he says will appear very different printed on good paper with English ink.'[32]

Simultaneously, on July 24, Robert sent James a Progress Report from London. The plates of six perspective views had already been despatched from Venice, thirty-one of various kinds were still in the Venetian engravers' hands and ten other subjects remained outstanding. 'On the other side,' he wrote, 'I give you the state of the plates in England' and he listed nine as finished and five as half-finished, which, he pointed out,

> with the 47 on the other side makes 61 plates in all which is more than bargained for. I really think it very possible to get the whole done by next winter but am afraid it would be impossible to get them all printed off and ready to deliver, besides that we must see how subscriptions go upon the proofs being thrown in to stirr up the public . . . Before any new publication I should wish for a Truce and Cessation (of the war), as everybody complains of the frequency of these works. A Peace will also turn men's minds more to the Arts and works of Merit. I am persuaded that if Stuart had to begin his subscriptions (now), as he has happily for himself ended them, he would not procure 100 in London. . . . If the frontispiece could be done by Piranesi it would be showy and make a puff here.

James replied to this letter on August 20, 1760:

> I have considered the list of your plates and am really glad to see this weighty business draw so near to a conclusion. . . . As to the frontispiece being done by Piranesi, Clérisseau assures me that we cannot trust to him for that he has always refused to work for others. . . . I am now getting the Proposals printed in Italian and have got some of the connoisseurs here engaged to hand them about among the nobility.[33] I think you are right to delay publication of Spalatro till winter after next. It both gains time for subscriptions and for printing off the plates, without encroaching too much on the patience of the public.[34]

James was somewhat premature with his self-congratulations in having brought 'this weighty business so near to a conclusion,' for it was only at this stage, when it became possible to make up a 'dummy' of the book, that certain alarming discrepancies and inaccuracies were revealed—the result, one may suspect, of Clérisseau's weakness for imaginary reconstructions and additions[35]—and James was soon engulfed in a fresh series of complications, writing rather querulously (August 5, 1760):

> There is a difficulty with respect to the Spalatro Plan . . . 'tis the great height of those windows of the exterior wall that are supposed to have lighted Diocletian's bedchamber and the private Caenatio. In short, the height to the top of those rooms, which must have been 46ft. is a thing almost impossible to imagine, because it raises them higher than the roofs of the Cryptoporticus, Basilica &ca. &ca. If therefore there was no row of windows in the exterior wall lower than those now mentioned, let us rather suppose the Cubiculum of Diocletian and his Caenatio to have been, like the others, lighted from the roof and that these arches or windows above served only as a continuation of those that were supposed to light the high gallery that surround the Palace. By this means we shall save a great appearance of improbability and shall with great ease, by means of a door in the end of our gallery, continue our walk round the Palace overhead of the Cubiculum of Diocletian, the Caenatio and Cryptoporticus—which, for the sake of the walk, I would suppose all of the same height. I am fully persuaded if Bob will look upon the Plan and Sections he will perfectly understand me. There will, however, be something to alter in the description because I remember the Cubiculum and Caenatio were both mentioned as lighted from the side.[36]

Later, on September 24, he wrote to London about further discrepancies and his proposed corrections:

> I send enclosed a half of the geometrical Ruins of the Marine Wall, which Clérisseau and I have fully considered and are of the opinion that any alteration that is made on it might be done on this plate and not on the View, it being a pity to alter it, whereas this can't suffer. Some corrections are made on it by Clérisseau and the arches are made a little more complete to answer those of the view. The columns of the Venetian Window are also restored, which can have no very bad effect because if they are not there now, they have been there and should future travellers ever critize 'tis easy to suppose they were there in Bob's time.[37]

Robert, with his Robertsonian passion for accuracy, can hardly have been reassured by such cavalier treatment of his archaeological labours. His comments are not recorded but his feelings may be judged, perhaps, by his approach to another problem which now began to raise its ugly head—the question of how, or rather whether, Clérisseau's contribution to *The Ruins of Spalatro* should be acknowledged. As little credit as possible should be given him, thought Robert, who had been exceedingly annoyed to read, in a letter from Consul Smith, of 'those very fine drawings done by Mr. Clérisseau under your eye.' The wretch had been showing the Spalatro drawings to 'all the English he could lay hands on,' said Robert, 'by which means they spread it abroad in England and Mr. Chambers and Mr. Milne and all of them may, and I don't doubt but do, give it out that all the drawings are Clérisseau's—and how can it be otherwise when he wishes it should be known?' The only remedy was to print *Robert Adam delint* under every plate. James at first agreed—'I can't see why you should not, especially as three-fourths of the people who see the book will imagine that you did the whole and the remaining fourth cannot but know that you did some of them'—but later he changed his mind. 'My reasons are these,' he wrote to his sister Betty :

> First it is known to the world, by his own Preface, that C(lérissea)u was carried there by him, and those English who know C(lérissea)u must guess the reason and must be sensible that most of these views were done by him. Bob confessing of this is much more honest and much more candid than to seem to desire the reputation which is due to another.

In the event all names were omitted from the plates except those of the engravers and Clérisseau's share in the work was successfully concealed by relegating his name to the list of foreign subscribers and to a brief mention in the Preface as 'a companion on the voyage.'

James left Venice in November, 1760, having instructed Mr. Duff to forward the ten remaining plates to Rome as soon as they were ready. As might have been expected, the engravers applied themselves less ardently to the burin when James was no longer there to goad them and it was not until the end of May, 1761, that the plates reached Rome, 'to get a little re-touch of the gravers here,'[38] wrote James, before they were forwarded on to London. At last, on August 7, he reported that every plate was satisfactorily finished and that he was making up a final and corrected *dummy*, 'put in its proper order, with the dimensions and explanations.'[39] On February 4, 1762, it was brought to Robert's house in Lower Grosvenor Street by Lord Gormanston; but Robert's delight soon turned to dismay as he thumbed eagerly through its pages. 'I am much puzzled and much perplexed by this same Book of Spalatro,' he wrote to James. Needless extravagancies, such as a 'Table of contents' had been introduced; the plates were sub-titled in French as well as English ('as there is to be no French edition,' he remarked, 'this would look absurd'); the whole lay-out was mismanaged; there were obvious inaccuracies in some of the

[26] Advance payments were evidently made for James wrote (July 18, 1760) 'tis impossible to get Bartolozzi to do anything. In the meantime we have his note for the money and are considering ways and means of recovering it.' It was decided he should pay 'his debt (being 50 zecchins)' in making pastel copies of paintings by Balestra and others which James thought would 'sell to advantage in London.'

[27] I have been unable to find a copy of these Proposals. See also footnote 32.

[28] A French edition was contemplated. James reported (July 15, 1760) 'Clérisseau had some time ago a letter from Mariette of Paris about some antiquities, &ca. He concludes by desiring to be informed when his friend's work of Spalatro will be finished and hopes there will be a French edition of it as the expectations of the learned there are great. He is persuaded Mr. Wood had no reason to regret his having translated his Palmyra and Balbec into their language.' Mariette remained a faithful protagonist of *The Ruins of Spalatro*: see his letter of 1765 (Bottari-Ticozzi: *Raccolta di Lettere* (1822), Vol. V, page 426.)

[29] Santini 'is turned out a capricious creature that must have a person over him to keep him to work' (James Adam: June 25, 1760). 'The first day I was a little dry to him, but when I found him inclined to proceed I changed my tone and became more mild . . . since which time he has continued in perfect subjection and is inclined to dispatch whatever is given him. Zucchi is likewise close at work.' (James Adam: July 18, 1760.)

[30] This seems excessive. Felice Polanzani charged 12 zecchins for engraving Nogari's *Philosopher* in 1743. (*Jahrb. der Preuss. Kunstsammlungen* Vol. LII, 1931 (Beiheft), p. 59.)

[31] The abbé was Paolo Santini (1729–1793), 'prete della chiesa di Santa Maria Formosa.' See G. Moschini: *Dell'Incisione in Venezia* (Venice 1924) p. 156. Santini is now remembered only for his *Atlas Universel* published at Venice in 1776.

[32] The paper for *The Ruins of Spalatro* was bought at Rome. The watermark would appear to correspond with Heawood's No. 1592 (Rome 1739).

[33] No copy of these Proposals appears to have survived. Consul Smith, who published Stuart and Revett's Proposals in 1753, no doubt published Robert's as well. They would have been printed by the firm of Glambattista Pasquali which Smith financed. It was presumably to these Proposals that Gradenigo referred on '19 Febraio 1760 M.V. (i.e. 1761) Roberto Adam, Inglese . . . esibisce un Libro stampato, che fù ben inciso dimostrante le *rovine del Palazzo dell'Imperatore Diocleziano esistenti nella Città di Spalato nella Dalmazia*, il qual Volume si vende dà Glo Batt. Albrizi Libraro per sei Zecchini e contiene 60 stampe in foglio Imperiale.' (N. H. Pietro Gradenigo: *Notizie d'Arte*. ed Lina Livan [Venice 1942] p. 71). The Biblioteca Correr at Venice possesses a pamphlet of 32 pages in quarto, containing an Italian translation of the text of *The Ruins of Spalatro*, to which is added a dedication *A Sua Eccellenza / Giacomo Foscarini/di Sua Eccellenza / Sebastiano Cavalier*. This dedication is signed by Francisco Egidi. The pamphlet bears the same date as the London edition and refers to 61 plates. The printer's name is not given.

[34] As an advertisement Robert proposed selling the engraved perspective views separately but James suggested (August 13, 1761) that these be sold in pairs for wall-decoration, as in a Print Room—'the whole may be so adjusted as to adorn the side of a dressing-room extremely well. You ought to finish a side of your little red room in this way to show the public the effect.' He proposed charging 2s. or 2s. 6d. per print. This may be the origin of this charming form of eighteenth-century interior decoration.

[35] Robert had already had occasion to curb Clérisseau's fancy (August 24, 1760): 'By Clérisseau's last letter I see he wants to do something to the inside of the Imperial Apartments but I am afraid that is pushing the joke too far. In a ground plan the smallest bit above ground gives hints, but when no walls remain except in one spot, it would be absurd to suppose they were all remaining.'

[36] The engraving and text appear to have been emended as James suggested. See Plate XVIII (the walls break up in the middle and the vaults are omitted) and page 11 of the *Description* where the Cubiculum is said 'to have been particularly contrived for excluding light and noise,' while the Caenatio is said to have 'enjoyed benefit of the setting sun.'

[37] Plate VIII by Walker appears to have altered, as James suggested, to agree with Plate VII by Santini.

[38] James brought Domenico Cunego and Antonio Zucchi to Rome. The 'acqueduct and Jove's Temple' were being engraved at Rome by Cunego in May, 1761.

[39] James wrote to Robert (March 7, 1761): 'If you wish me to do anything in the explication of the plates you must give me all the materials, both what we collected before I left you and what you yourself remember of the constructions, &c.' He suggested it would be better if Robert and William Robertson collaborated over the 'explications.'

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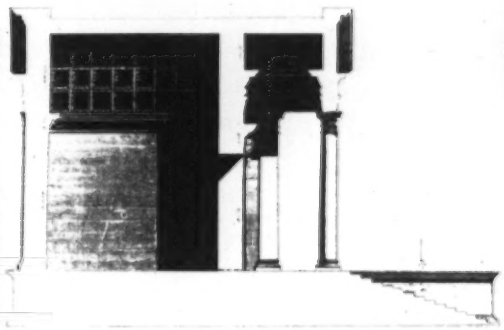

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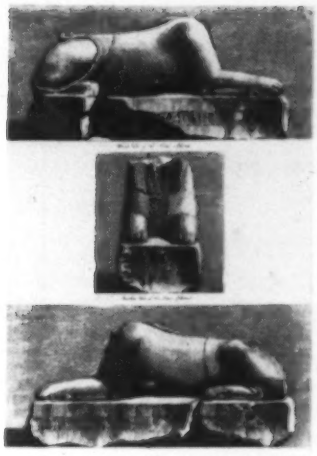

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Clérisseau proved unreliable, rather than grossly inaccurate: the discrepancies between perspective, 6, and section, 7, of the Temple of Aesculapius extend beyond the mere matter of steps, but complaints about the hieroglyphics on the sphinx, 8, were unfounded and they can be read.

plates and, worst of all, there were not enough of them, for 60 plates in folio had been promised to the subscribers and James had only produced 56. Robert exercised all his ingenuity in juggling with the plates to make them spin out to 60 folio sheets, but confessed himself defeated. 'If you could fall on any device to supply this deficit, I should be much obliged to you,' he remarked sarcastically to James.

> If there had been any altars or any other ornaments, we could have tickled up 4 plates in a few days, or some basreliefs would have done very well. But I am afraid these are things scarcely to be ventured on inventing—what say you?

Is this sarcasm too—or was his passion for accuracy waning? If the latter, it soon revived. 'Clérisseau has been very thoughtless in his views,' he went on relentlessly:

> if you look at the steps of the Temple of Aesculapius you will see they are so large and so high that in place of 15 steps he could not have ten. Then he says it was of brick encrusted with marble, whereas it really is of stone, like Jupiter's, both outside and inside and no brick about it. You will also observe that in the view of the outside of Jupiter's Temple he has made columns remaining in the outside of the octagon that do not remain and are marked faint in the plan.[40]

Not even the general view of Spalatro escaped his criticism:

> I cannot see how you have supposed the right road from Salona to Spalatro to be atop of the acqueduct, as there was a fine level though rocky road all the way between the town and the Palace, so that I can conceive no reason for this conjecture. Besides the road would have been too narrow.[41]

It was only too clear that much of the detail had been invented by Clérisseau in a very unscholarly spirit. Plate LV, for example. 'From whence take you your authority for the sphynx holding a head or image of Jupiter in his hand?' Robert demanded, 'because I shall be asked the question. Are the hieroglyphics real ones on the other sphynx (that not of my acquaintance) or are they imaginary ones? as they have published a book on the explication of these diabolical characters and may prove to be a falsity.'[42]

Faced by such grave problems, he thought it hardly worth mentioning the apparently haphazard appearances and reappearances of the *Rusticks*. 'As you have shown the Rusticks in the inside of the Temple of Jupiter and in the general section, it will look odd that they are not inserted in the large sections, where they ought to have been'—but he decided to 'let them go as they were, without putting in the Rusticks . . . which would now be very troublesome.' Finally he turned to James's suggestion for the frontispiece: an engraved portrait of the King. Robert remarked scornfully that he and his sisters were 'of one mind in thinking it would appear very vulgar, as it is not, nor has not been, the fashion with books of consequence.'

Thus the correspondence between London and Rome was to drag on intermittently until the autumn of 1762.[43] James reconsidered the layout during the summer and revised his Explanations. He showed the whole book in manuscript to Winckelmann and must have been highly flattered by the great man's opinion of it, for Winckelmann wrote to his friend Volkmann on June 18, 1762, that 'there will soon be published a magnificent work in English, containing accurate drawings of the Palace of the Emperor Diocletian in Salona. . . . The comment in English has been given me for checking. It has been thought out with great intelligence and taste.'[44] And again writing to Usteri (July 4, 1762) he said that the text was 'much as I would have attempted to write it.'[45] But the glow suffused by the great Winckelmann's approval must have been sadly cooled by news of the imminent publication of *The Antiquities of Athens*, with a dedication to George III. James heard of it from Sir Robert Strange, the famous engraver, who was then at Rome, and wrote to his sister Jenny (June 12, 1762):

> I can't say I like this sort of forestalling much. I wish we had been first. If you remember I wrote you on this head some time ago. However I am far from saying this interferes with our project, because why not two of these to the Protector of the Arts? and perhaps there may be something cleverer in the one than in the other—which I should be extremely desirous of.

The Antiquities of Athens appeared later that year and its immediate success may account for the despondent note sounded in the last reference to *The Ruins of Spalatro* in the surviving Adam letters. Writing to James from London on December 21, 1762, Betty Adam said:

> Bob is perfectly sick of all publications, especially by subscription, as he has fully experienced by his own work that people look upon it as picking their pockets, which to be sure is not an agreeable way for a gentleman to make money. These things are at present a drug and he does not think that they are likely to have soon a greater relish for them.

Astute and businesslike as ever, Robert allowed the acclaim which greeted *The Antiquities of Athens* to subside before bringing out his *magnum opus*, so that when it finally appeared, in 1764, it took its place, calmly and without question, alongside the folios of Stuart and Revett and of Robert Wood. No doubt it advanced the reputation of the already flourishing Adam firm, though Gibbon, for one, was sceptical of its scholarship.[46] Whether its author considered it to have been a profitable venture may be questioned. A revealing and disheartening entry appears in the Adam firm's accounts in July, 1772, when the financial position following the Adelphi disaster was being examined—'By Spalatro for Balance of that account, being the value of plates and copies on hand: £659 15s. 0d.'[47]

[40] Compare Plate ~~XLII~~ XLVI which shows 9 steps and Plate XL which shows 15 steps. The text was amended to read 'The walls of this Temple are built of Freestone. . . .' For Jupiter's Temple see Plates XXVI and XXVII which do not agree.

[41] The *Description* contains the following words, presumably interpolated by Robert—'This acqueduct is vulgarly supposed to have been a Highway leading from Salona to Spalatro: But besides the Remains of the Conduit for Water, which is yet observable in many Places, it is too narrow ever to have served for any other Purpose than that of an Acqueduct, as it is not above Eight Feet wide over the Walls.'

[42] The sphinx holding a head of Jupiter was presumably that shown on Plates LV and LVI. The sphinx with hieroglyphics is that shown on Plate LX. The book on hieroglyphics to which Robert referred was presumably *De Inscriptione quadam AEgyptiaca taurini inventa et characteribus AEgyptiis* published at Rome in 1761.

[43] The last copper-plate arrived in London at the end of August, 1762.

[44] J. J. Winckelmann: *Briefe* (ed. Rehm & Diepolder: Berlin 1952–57) Vol. II p. 237.

[45] *ibid.* p. 248.

[46] 'But there is room to suspect that the elegance of his designs and engraving has somewhat flattered the objects which it was their purpose to represent.' (*Decline and Fall*, Chapter XII.)

[47] Blair Adam Papers. This is probably an exaggerated estimate. The accounts were prepared for the benefit of creditors after the Adelphi disaster.

THE ABERDEEN QUARRIES

by T. C. Barker

There has been a tendency to dismiss John Adam as a man of little importance, not to be mentioned in the same breath with his two younger brothers, Robert and James. Bolton, for instance, came to the conclusion that his 'greatest interest and occupation' lay in developing the family acres at Blair Adam, near Kinross.[1] Swarbrick has pointed out, however, that John Adam undertook various public works in Scotland and during the years 1767–72 was employed to build the Jamaica Street Bridge over the Clyde at Glasgow.[2] I have now found in the Aberdeen Town Records evidence of yet another of his activities and suggest that he may well emerge as a man of considerably greater stature than is at present supposed.

On March 27, 1766, Aberdeen Town Council considered an application from John Adam, describing himself as an architect of Edinburgh, for a 21-year lease of stone in the Bay of Nigg to the south of the town. Adam informed the Council that he had the opportunity to be supplied from elsewhere but preferred Aberdeen stone, as he had already 'another branch of business of the same nature carrying on at this place [Aberdeen].' His application was successful and on July 1 of the following year, 1767, he took a further lease of stone in the vicinity, in this second case for four years.

Why did he take these leases? Where was the stone to be used?

In the first half of the eighteenth century, a considerable coastwise trade had developed between Aberdeen and London, and an Aberdeen-sponsored concern calling itself the London Shipping Company had been formed to take advantage of this

[1] A.T. Bolton, *The Architecture of Robert and James Adam* (1922), vol. I, p. 5.

[2] John Swarbrick, *Robert Adam and his Brothers* (1916), p. 219.

growing volume of trade. Vessels returning to London carried cargoes such as woollen stockings and salmon, but in general these back freights were insufficient and stone had to be taken aboard as ballast. On February 23, 1771, for instance, Aberdeen Town Council resolved that John Adam should 'afford the Town of Aberdeen's shipping plying the London trade such quantity of stones as they may incline to take on board at the usual freight paid by him to others. And that the said shipping shall have the same dispatch in loading and unloading as is given to any other ships which may be under contract or charter party with him.'

There was a growing market in London for this stone, which was almost as hard as granite though not actually granite itself. The early 1760s saw the first attempts by the local authorities to pave the London streets,[3] and these slabs of stone were ideal for the purpose. The stone from John Adam's quarries was indeed used for paving. On March 29, 1773, Aberdeen Town Council heard a letter read from Messrs. John Adam and Company, seeking permission to allow their 'paving and street stones' to lie on the quay for a longer period of time than was stipulated in the local by-laws. So John Adam emerges as a stone merchant selling some of the fine-grained silvery paving stones to London. However the document just quoted sounds as if the concern was unable to dispose of its paving stones as quickly as it would have liked. Might not this difficulty have arisen from the Adams' financial straits after the debacle of their grandiose Adelphi scheme? By the time of the next reference to John Adam in the minutes of Aberdeen Town Council, on March 17, 1774, the paving stone business was certainly in trouble. A Mr. Campbell of London—possibly the Archibald Campbell mentioned in the Commons' *Journals* as clerk to the Adams[4]—had then the right to John Adam's lease. Five years later, on August 17, 1779, John Adam himself wrote offering payment of outstanding debts and renouncing his lease. On this last occasion he wrote from the family seat at Blair. But his retirement there after the failure of the Adelphi gamble ought not to be allowed to obscure his earlier activities.

[3] M. Dorothy George, *London Life in the Eighteenth Century* (1925), pp. 99-100; Henry Hamilton, article on the Granite Industry in *Further Studies in Industrial Organization* (1948); John Summerson, *Georgian London* (1945), p. 105.

[4] *Journals of the House of Commons*, May 27, 1773, Vol. XXXIV, p. 339.

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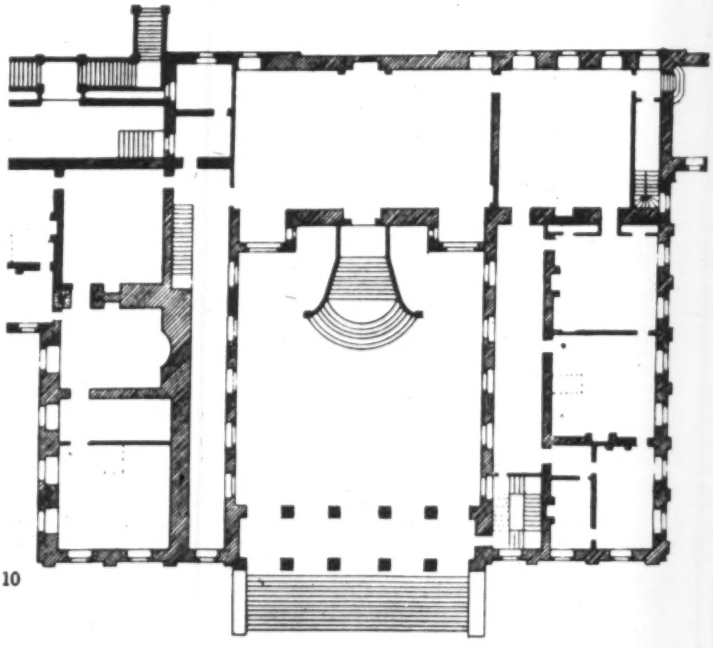

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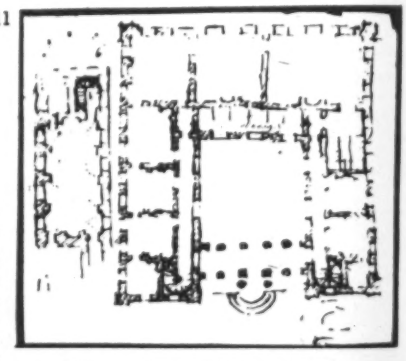

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Adam's transparent portico at Osterley Park was not a complete invention: William Talman had proposed a similar portico giving on to a courtyard for Witham Park in Somerset, a house with which Adam himself was connected in 1762. *An elevation*, 9, *and plan*, 10, *of Talman's scheme were published in* Vitruvius Britannicus, *in* 1717, *but the preliminary sketch*, 11, *appears to date back to the beginning of the century.*

THE TRANSPARENT PORTICO

by John Harris

The portico at Osterley Park is quoted as an example of Adam's genius in inserting a feature of apparent Neo-Greek elements into one side of a traditional Jacobean courtyard house to provide dramatic effect. There can be no doubt of the romanticism implicit in the contrast of two styles of architecture or that the portico's visual line is Grecian. To Horace Walpole, one of the earliest literary commentators on the new house, it was 'as noble as the Propyleum at Athens.' The grand entrance to the Court of the Sun at Palmyra is but a portico breaking a length of wall with an ascent of steps. There the similarity with Osterley ceases. None of the details from Osterley can find a prototype from Robert Wood's *Ruins of Palmyra*, published in 1753. The essential difference between the two porticoes is in Adam's integration of an outer with an inner space.

As another source for Adam's idea the Portico of Septimus Severus in Rome has been suggested, available to him in Desgodetz's *Edifices Antiques*, 1682. The order is there a fluted Corinthian and the double screen is part of a free-standing temple, not integrated as at Osterley.

The responsibility for the invention rests in fact with William Talman, who placed a portico in exactly the same context across the entrance to the courtyard of Witham Park, Somerset, 9, which he rebuilt for Sir William Wyndham. The house was engraved in the second volume of *Vitruvius Britannicus*, 1717, where plates 91–92 are 'associative' to Talman's Dyrham Park designs. Colen Campbell in his descriptive preface states that 'when the whole design is finished there will be abundance of State and Accomodation . . . a Front to the Gardens with a Composite Hexastyle, which makes a beautiful portico to the court Anno 1717.' Possibly Campbell was mistaken in believing the portico to have faced the gardens; for the plan, 10, shows it as an entrance front with a flight of stairs to piano-nobile level directing one beneath a portico narrower than that at Osterley and up a central flight of stairs to the main Hall. Lack of evidence precludes one from affirming whether the house had previously possessed a courtyard plan and was therefore broken into by Talman in this Baroque manner. There was no question of contrasting old with new and giving it a romantic effect. Veneration for the past was not absent from Talman's mind, but here his façade is a pilastered composite order against a channelled stone face. The pediment is set into the height of the attic storey which seems to the eye to be capped by the cupolaed lanthorn that in fact rose above the Hall on the other side of the court.

A preliminary sketch for the first floor plan is in the Victoria and Albert Museum, 11,[1] and is basically the same as the engraved one. The

[1] E.118—1940, reproduced by courtesy of Victoria and Albert Museum. With E.107, 161, 163 these sheets have been attributed to the School of Vanbrugh but are indubitably of Talman's manner of sketching, quite apart from the fact that they are in John Talman's portfolios of work. The question of Vanbrugh's participation at least *in theory* will be discussed in a future publication.

approach is in a tentative stage of development with an insignificant semi-circle of steps rising to where the two central columns of the portico have been doubled. It is possible to date this early plan by the associative sketches on the same sheet. Two are of Dorchester House, Weybridge, for Lord Portmore of before 1702 and others are contemporary with Talman's Hampton Court 'Trianon' scheme of c. 1699–1700. Perhaps the years between c. 1700 and 1717 are the period of Talman's responsibility at Witham, or else it may have terminated earlier, or later, at his death in 1719.

Talman's idea was in theory exactly reproduced at Osterley. The widths of the porticoes nearly correspond, but in depth Witham's 15 feet is much less than the 36 feet at Osterley. This illustrates the screen effect of the former as opposed to the more subtle spatial relationships of the latter, according with Adam's Neo-Classical ideas of planning. The surprise element at Witham is the deception of the cupola rising above the portico wing, that upon progression into the courtyard would be dramatically revealed above the Hall. This element of deceit is Baroque and not uncommon to Talman's practice.

Work on the house must have continued after 1719 and the completion was possibly due to James Gibbs. The Ashmolean Museum possesses an elevation[2] in his hand similar to that in *Vitruvius Britannicus* but with the addition of some typical Gibbsian modifications.

In 1762 Sir Charles Wyndham sold Witham to Alderman Beckford of Fonthill who in that year employed Adam to draw out plans for a new house. The engravings in *Vitruvius Britannicus*[3] refer to this as having been built but Collinson[4] describes the entrance front as having '2 semi-circular columns of fine proportion and elegance, one on each side of the door, which reared their rich and lofty capitals almost to the top of the edifice,' and this does not correspond with Adam's designs. In any case the new house, begun on a different site, remained unfinished until both houses were demolished by William Beckford later in the century.

The early designs for Osterley, dated 1761, have an attached portico to the hall front, proving the screen portico to have been an afterthought, occasioned by Adam's visit to Witham in 1762. As an elevational element it is not unlikely that the Portico of Septimus Severus was the source for Talman's Witham façade.

[2] Gibbs Coll., Vol. IV, 22.

[3] *Vitruvius Britannicus*, Vol. V, plates 38–42

[4] J. Collinson, *History of Somerset*, 1791, II, 234.

FREDERICK'S PLACE

by M. J. Chandler

New attribution to the work of the Brothers Adam becomes rarer by necessity, as the research of their achievement goes on. Yet Frederick's Place in the City of London can now definitely be added to the list of minor work. In spite of many alterations, inside and out, traces of the Adam work of—as Mr. A. T. Bolton called it—the Adelphi-type remain.

The basis for this attribution are several drawings in Sir John Soane's Museum, firstly for a 'Ceiling' for a drawing room in vol. 13 no. 103 and secondly designs for chimney pieces in a dining room, drawing room, two dressing rooms and a bedroom in vol. 24 no. 49–53. These drawings were made for 'The Great House' in Frederick's Place. A few drawings of no. 6 Frederick's Place, for a house built by John Adam and his brothers on behalf of a Mr. Whitmore, are now in the RIBA Library to which they were given by the present owners. From a few newly found documents it can now be proved that the Brothers Adam laid out and built the entire close.

The sources are the *Journals* of the Commissioners of Sewers for the City (vol. 10 1775, p. 244–5) in the Corporation of London Records Office in which in an entry for October 10, 1775, a petition of four Adams are recorded.

'Pet. Adam Compound for Paving

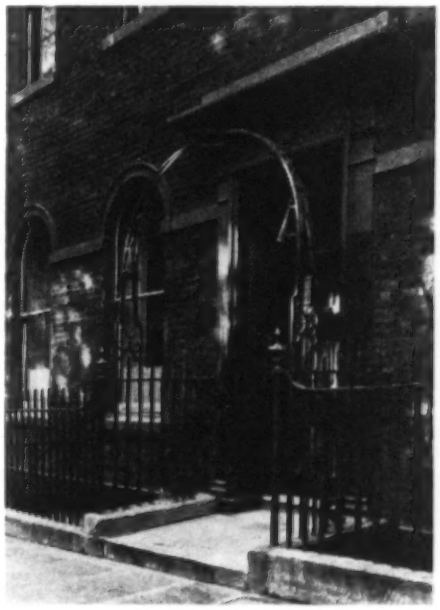
The Petition of John, Robert, James and William Adam Architects was read setting forth that they have converted the scite of the Ground whereon the late Excise Office stood into a Square and have erected thereon eight capital Dwelling houses and praying to be permitted to compound with this Court for paving the said Square.'

This petition was duly granted and it was ordered:

'That the Surveyor do measure the said Square and report the expence to be paid by the Petitioners, And that when the same is paid into the Chamber of London the said Square be new paved under the direction of the Surveyor.'

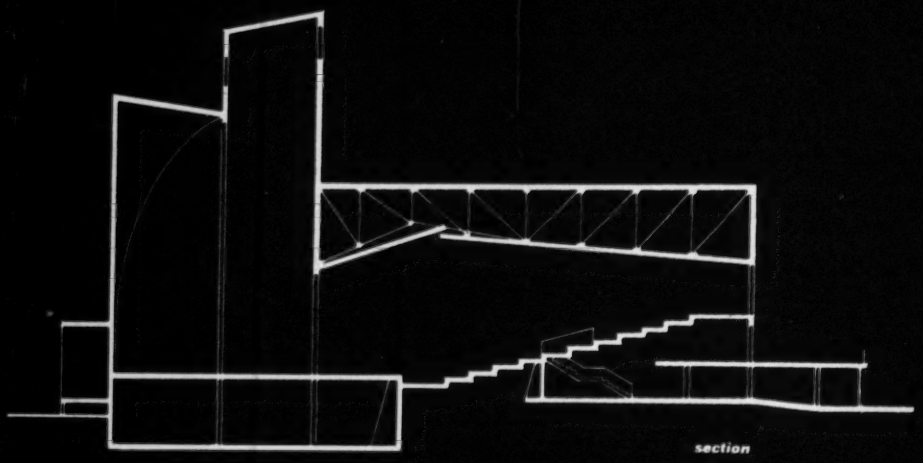
The Surveyor accordingly reported on July 2, 1776 (Journal 11 (1776), p. 142–3) that 'the quantity of paving to be made in Frederick's Place in the Old Jewry and the increase of the width of the Street in front thereof' was 412 yards, which amounted at 3s. per yard to the sum of £61.16.0. Orders were again given that the work should be carried out when the money was paid into the Chamber.

From these documents it becomes certain that the Adam Brothers did lay out Frederick's Place and built all the houses there.



12, *the doorcase and front railings of one of the houses in Frederick's Place, laid out by the Adam Brothers in* 1775.

Alejandro Prieto's boldly-modelled new theatre on the Avenida de los Insurgentes, Mexico City, has acquired an especial interest over and above its striking virtues as a work of architecture, for its main street facade has provided the wall-space for the last major public exercise of the genius of Diego Rivera, the Mexican painter who did more than anyone else to create a visual image of the energies and aspirations of the Mexican Revolution, and died last November at the age of seventy-one.



section

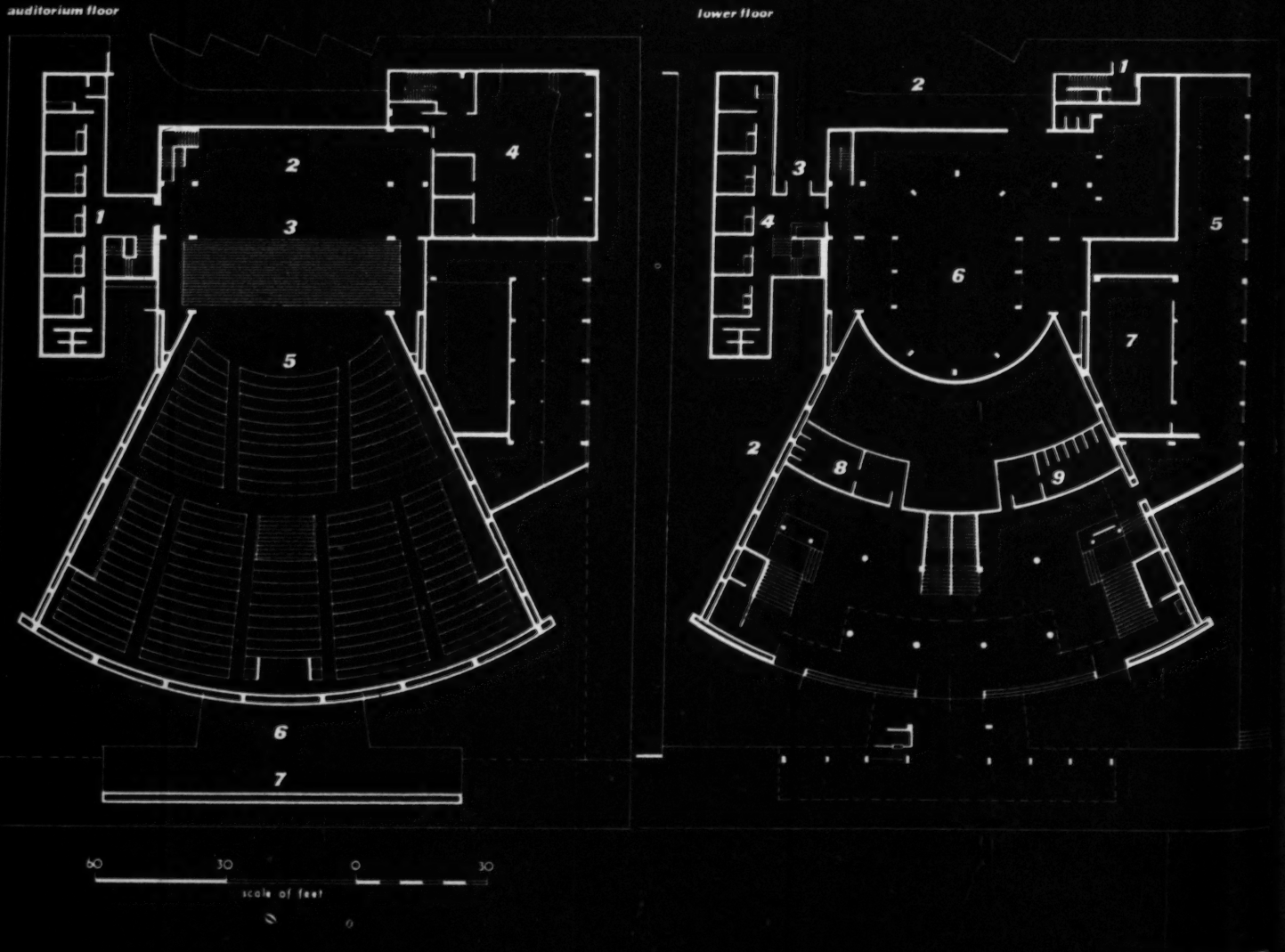
lower floor

1. rehearsal room entrance.
2. parking area.
3. stage door.
4. dressing rooms.
5. shops.
6. machinery.
7. garden.
8. cloakrooms — men.
9. cloakrooms — women.

auditorium floor

1. dressing rooms.
2. flies.
3. stage.
4. rehearsal room.
5. auditorium.
6. canopy.
7. illuminated advertising.

THEATRE IN MEXICO CITY: ALEJANDRO PRIETO, ARCHITECT



THEATRE IN MEXICO CITY

2

The metropolitan 'Teatro de los Insurgentes' in Mexico City offers public performances of comedy, opera, ballet and revue as well as orchestral concerts. The seating capacity is 1,300. In a small rehearsal room linked to the main auditorium concerts of chamber music or recitals by soloists can be given.

The vestibule is reached under cover from the Avendina de los Insurgentes, and contains the booking offices. The foyer has a restaurant to one side of it and cloaks and smoking rooms on each side of the central staircase.

The backstage arrangements incorporate modern technical developments and the proscenium arch has been omitted. The orchestra stalls are laid out in the form of an amphitheatre giving each seat perfect visibility and acoustics. In the air-conditioned auditorium the distance of the furthest seat from the centre of the stage is 78 ft.

Scenery is dealt with by a revolving platform, which besides moving from right to left and vice versa, is able to move forward or backward, according to the requirements of the works being staged; it is also able to rise and descend as it turns. The stage is equipped with a cyclorama. The stage opening is 47 ft. wide by 20 ft. high and has a roller-type velvet drop-curtain with a vertical movement. The acting area is 40 ft. deep by 47 ft. wide. Modern staging and production techniques have made it possible to omit prompter's box and footlights. The dressing-rooms occupy a three-storey block. In it are fourteen dressing-rooms each with bath and sofa, two joint dressing-rooms each of which accommodates thirty people, and two 'star' dressing-rooms.

The restaurant, accommodating 200 people, has glass walls facing the street, and an indoor garden with space for a floor-show. A basement houses workshops with hoists at stage level and offers direct entrance from the street for delivery vans. Behind the theatre is a car park for 400 cars.

The structure is a reinforced concrete frame on concrete foundations. The stage tower rests on inverted concrete vaults and the main beam of 47 ft. clear span is trussed and makes use of the wall to ensure that the beam acts in conjunction with it. The main façade is covered with a mural by the late Diego Rivera, carried out in glass mosaic incorporating large patches of red and black tetzontle (a porous volcanic building stone). The total cost of the building including equipment and the mural was £85,700.

3

2, on the facing page, oblique view of the Rivera mural, and the entrance to the restaurant.
3, a view of the main foyer.
4, roof terrace with offices on the left.

Devizes
Bath
Frome

Trowbridge, the third town in the townscape series prepared by the Architectural Review in collaboration with the University of Bristol, is not an architectural gem, it's rather dull. The interest lies in its peculiarly possessive quality, its insistence on being a town and not an opened out traffic route. How it achieves this is hinted at in the plate opposite where the sinuous traffic routes contain the eye whilst the precincts are not separate but natural spurs or convolutions from the lively traffic stream.

Gordon Cullen

TROWBRIDGE

The presence of traffic in the environment gives to it a sense of purpose and a contact with the world beyond one's own backyard; it is the visible link which is so obviously lacking in a housing estate where the roads simply exist to serve the houses, where there is no link with the great world and where the pedal cyclist pushes and damply tries to get into touch. If the inner vitality of the neighbourhood, socially and visually is incapable of supporting itself emotionally (as it does in, say, Well Hall and Park Village West) then the loss of traffic is fatal, loneliness and desolation rule.

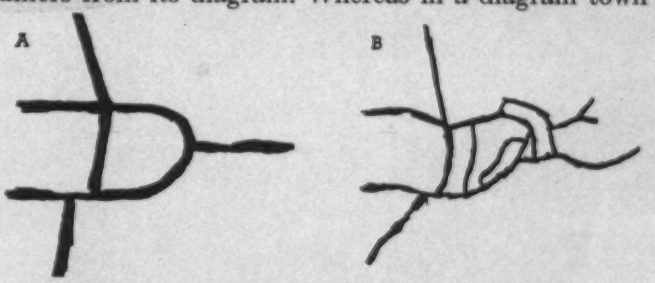
The original battle to segregate pedestrians and traffic, to create precincts (as we showed in Westminster Regained) in which the pedestrian could enjoy freedom of movement, freedom from the tyranny of fast moving traffic, has been won. The shopping and residential precinct is well established. Are we then, cynically, performing a *volte face* by extolling the virtues of traffic and so undermining the precinctual system? Not at all.

But the point must be raised that a lot of planning is to some extent an abuse of the truth. We have seen the result of the by-law town, the estate built according to legal lights. We have seen the sterility and boredom of it all. There is the danger of a more subtle form of sterility arising from an abstract approach, from the acceptance of okay planning terms and the use of abstract diagrams and drawings, or the habit of thinking in abstract terms, whereby the real process is reversed and made negative and sterile. The process is simple. One could, for instance, simplify the traffic circulation of Trowbridge in the form of a diagram and whilst this would, of course, be true as far as the traffic is concerned it would not be true of the town in any other sense. Yet the danger is that diagrams and abstractions are taken for the truth and acted upon so that in the end, if we interpret the world into a formula we shall end up by living in a diagram—which is precisely what the world is beginning to look like. The answer may be difficult. I feel that all the values are upside down, that instead of a creative, organic movement adding fresh meaning to the formulae and abstractions we are mechanically applying abstractions in the hope that they will set fire to the environment.

The only answer seems to be the stock piling of cases, as we try to do in Townscape, so that richness and invention are natural to us and instead of crude hammer blows we can use the particular tool for the particular job.

So to Trowbridge.

You may say, well, it doesn't really matter. Basically the town is like that, A. But, of course, it does matter because the particular shape, B, results in certain particular effects. Let us see how Trowbridge's real shape differs from its diagram. Whereas in a diagram town

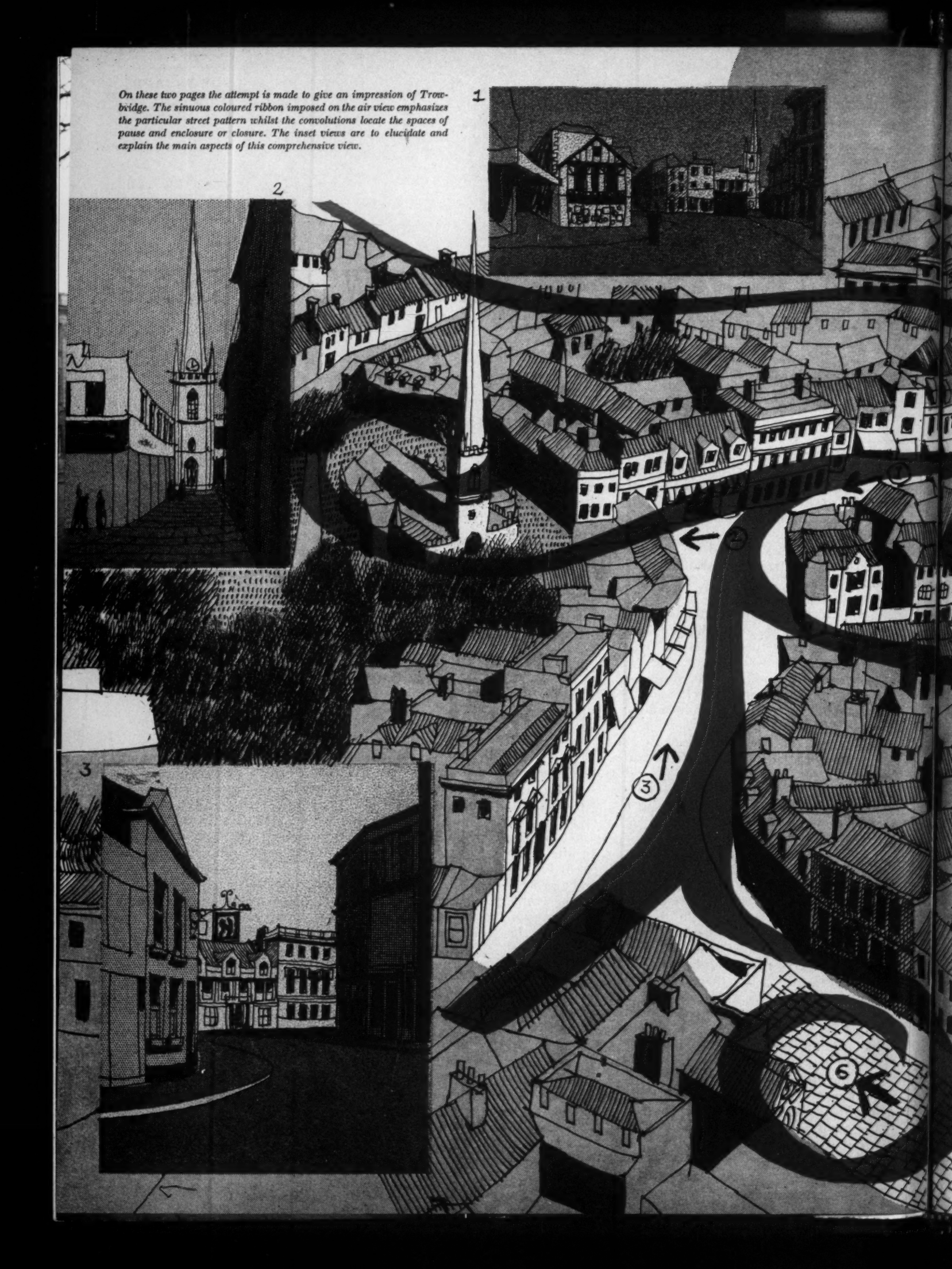


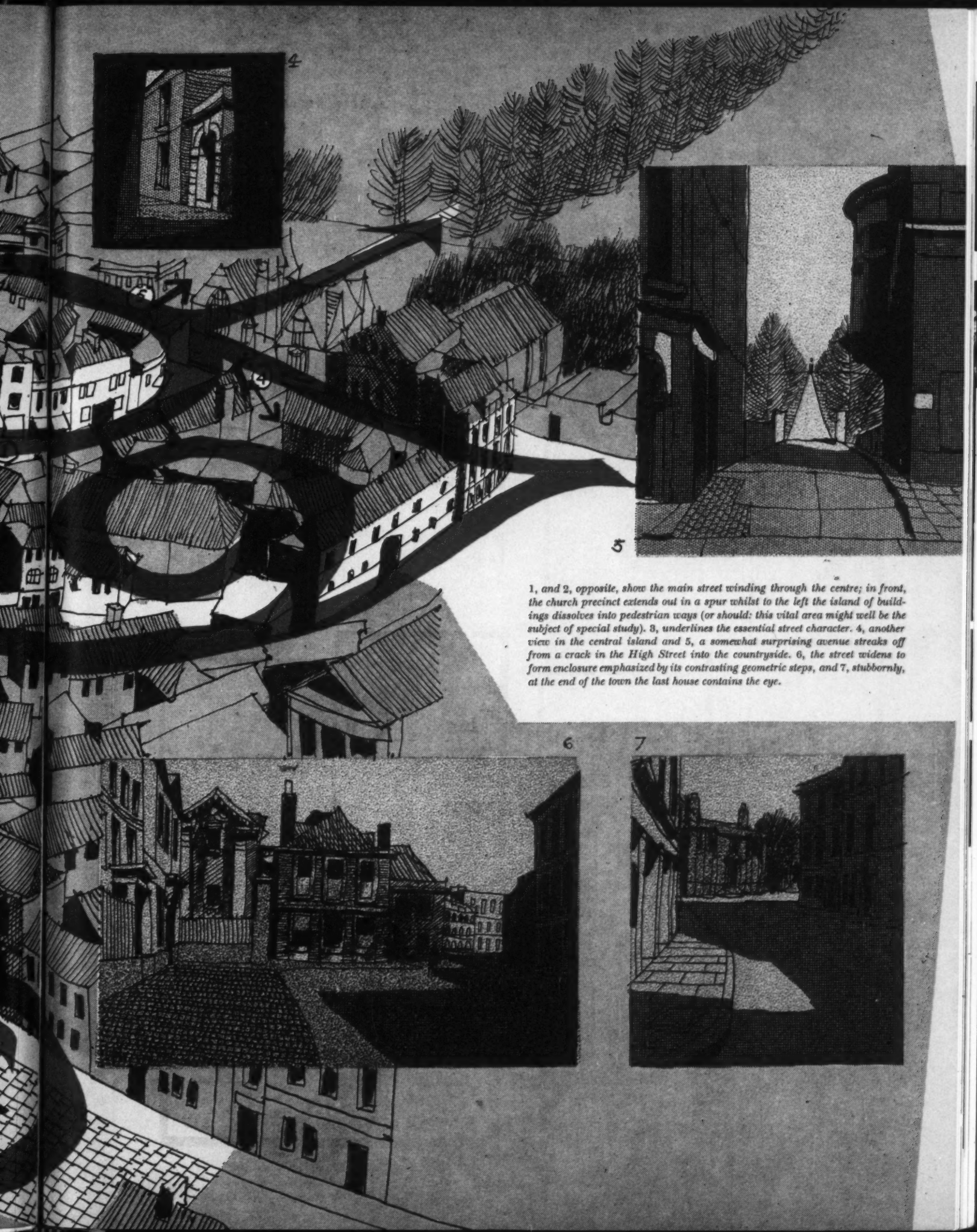
the traveller is aware principally of his route, his way in and way out (as at Gloucester where the Roman cross makes it a diagram town in which there is no sense of place) in Trowbridge one is insensibly and subtly wrapped into urbanism. Wide roads are made to yield up their excessive feeling of width by the curvilinear road pattern which effectively narrows the vista to a slit, the development of one containing view gives place, not to release but to another, so that the insistence on town eventually makes its impact. Naturally this has no adverse effect on the traffic circulation which whizzes along just as merrily as in any diagram town.

And to revert to the first thought, the relationship between precinct and traffic, here in Trowbridge we can perhaps see one good solution. For whilst at Gloucester the precincts are hidden away behind the four arms of the cross roads, at Trowbridge the precincts stem directly from the busy, urban enwrapping traffic stream like whorls or spurs so that whilst the curvilinear form contains and pinches the eye is entranced outwards.

Instead of two separate things, traffic circulation and precinct, in watertight compartments, here the two are in counterpoint and give meaning to each other.

On these two pages the attempt is made to give an impression of Trowbridge. The sinuous coloured ribbon imposed on the air view emphasizes the particular street pattern whilst the convolutions locate the spaces of pause and enclosure or closure. The inset views are to elucidate and explain the main aspects of this comprehensive view.



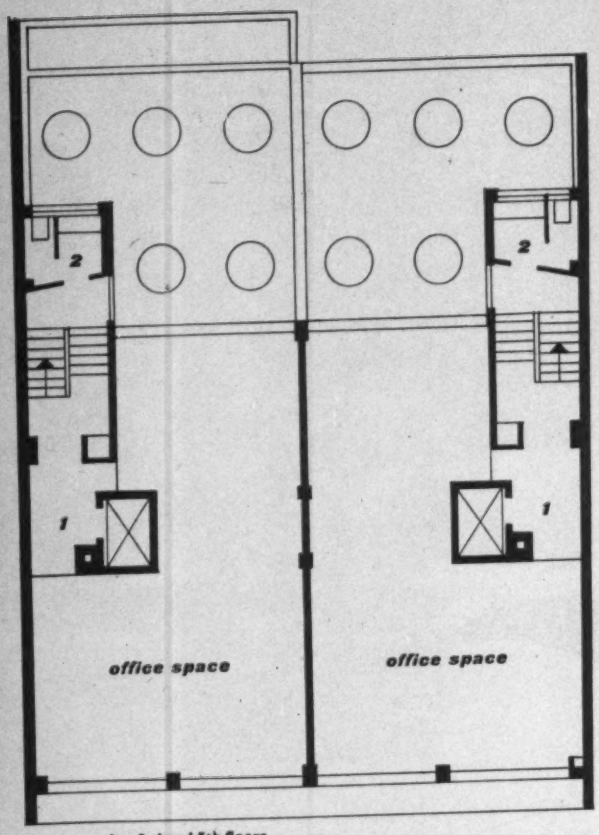


1, and 2, opposite, show the main street winding through the centre; in front, the church precinct extends out in a spur whilst to the left the island of buildings dissolves into pedestrian ways (or should: this vital area might well be the subject of special study). 3, underlines the essential street character. 4, another view in the central island and 5, a somewhat surprising avenue streaks off from a crack in the High Street into the countryside. 6, the street widens to form enclosure emphasized by its contrasting geometric steps, and 7, stubbornly, at the end of the town the last house contains the eye.

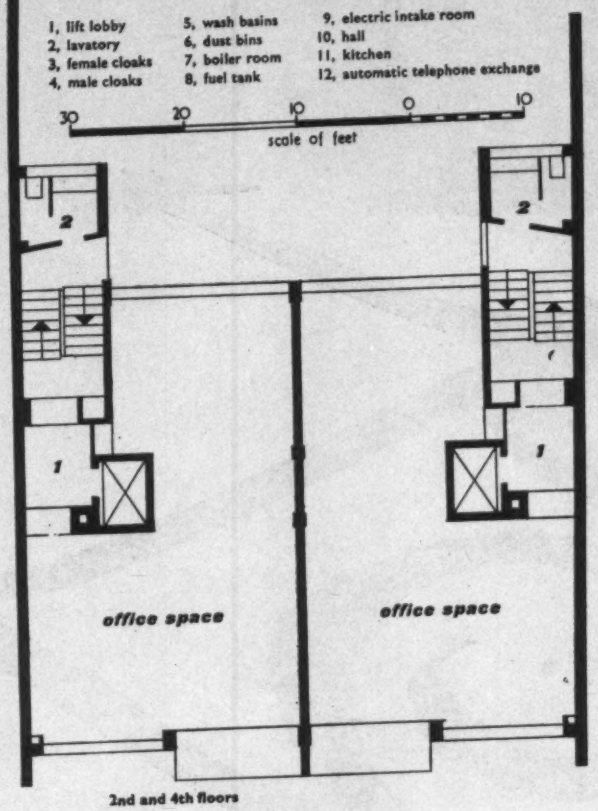
OFFICES IN ALBEMARLE STREET, W.1

1, lift lobby
2, lavatory
3, female cloaks
4, male cloaks
5, wash basins
6, dust bins
7, boiler room
8, fuel tank
9, electric intake room
10, hall
11, kitchen
12, automatic telephone exchange

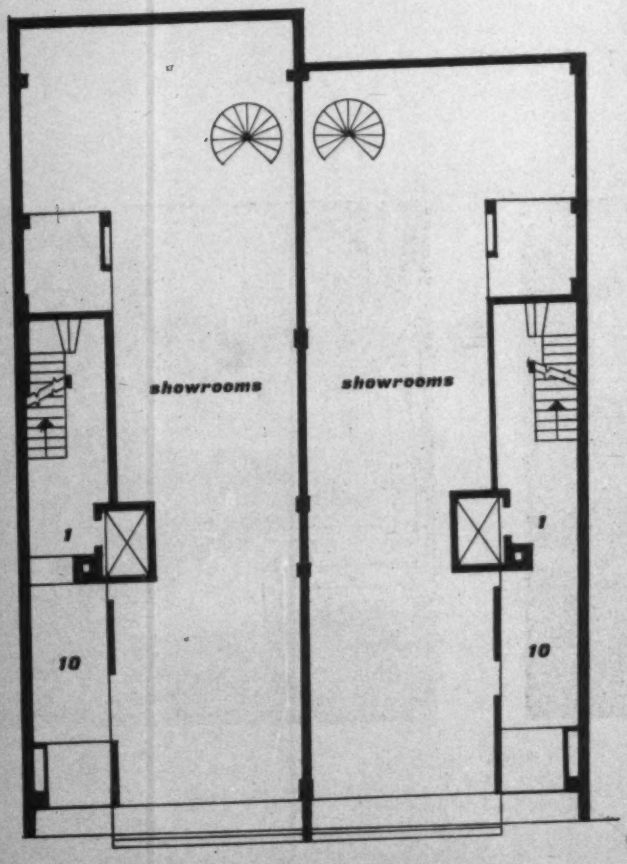
30 20 10 0 10
scale of feet



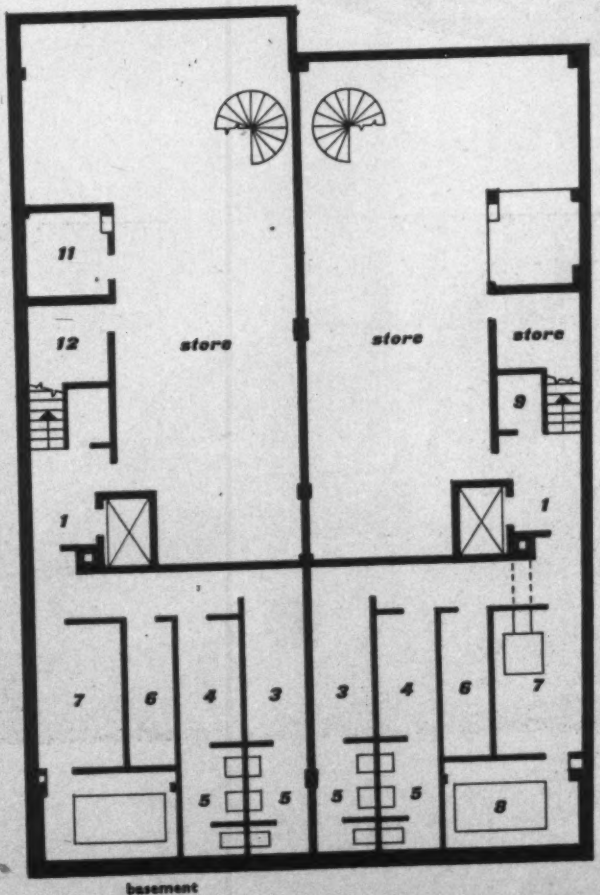
1st, 3rd and 5th floors



2nd and 4th floors



ground floor

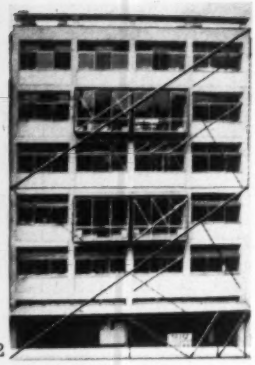


basement

OFFICES IN ALBEMARLE STREET, W.1.

ARCHITECT	ERNO GOLDFINGER
assistant	JOHN ROBERTS

1 the unified elevation to Albemarle Street covers two separate properties with separate structures and plans that are almost mirror images of one another. The recession of the façade from the established building line helped to avoid an arbitrary set-back at the fifth floor, as well as permitting the boxed-out alcoves on alternate floors.



OFFICES IN ALBEMARLE STREET, W.1

2. a system of *tracés regulataires*, based on the Golden section, was used in laying out the main elevation.

This block of offices and showrooms replaces two Georgian buildings, and although developed for two different clients it has been built simultaneously as one, with two internal walls facing each other separated by ½ in. building board. Each entity has its own entrance, staircase and engineering services. The net letting space is 71 per cent despite the restricted nature of the site (24ft. frontage to each building). The ground floor occupies 100 per cent of the site but the basement extends further under part of the pavement. The upper five floors are set back and incorporate the projecting alcove boxes. Relatively large letting spaces within the building have to be sub-divided to suit the tenants' requirements. In the case of 46, Albemarle Street this secondary planning was done by the architect. The golden section was used to control the design of the building.

The structure is of reinforced concrete. Vertical support is provided by rear and front columns, and the thin walls surrounding the lift and stairs. The centre twin pillars are covered with single stone slabs on the front and joined by 'V' shaped copper strips in the back façade. The front façade rests on three points only permitting a continuous opening of nearly 24 ft. in each building. Prestressed and prefabricated planks bonded in concrete form continuous r.c. floors. The offices are very deep; on the upper parts of the windows photobolic screens cut out the light and throw it on to the ceiling.

The structure of the street façade is clad in Portland stone, which covers the pillars and the floor thickness; the horizontal beams under the windows are covered with opaque grey-coloured glass. The bay windows of the

3

4 | 5
6

3. at the top of each window are three smaller lights set back behind an aluminium faced ledge which serves to reflect light back on to the ceiling and thus deeper into the room than it would normally penetrate. These ledges, and the plastic relief they give an otherwise flat façade, are clearly seen.
4 is a detail of door furniture and a switch installation in No. 46.
5 and 6, views of the show window of the same property from down, and up, Albemarle Street. The exposed RSJ which serves as a species of fascia-panel spans clear across each half of the façade and permits an all-glass ground floor in which the curtains and door furniture are the only solid elements.

TAYLOR - WOO
TAYLOR -

7

8

OFFICES IN ALBEMARLE STREET, W.1.

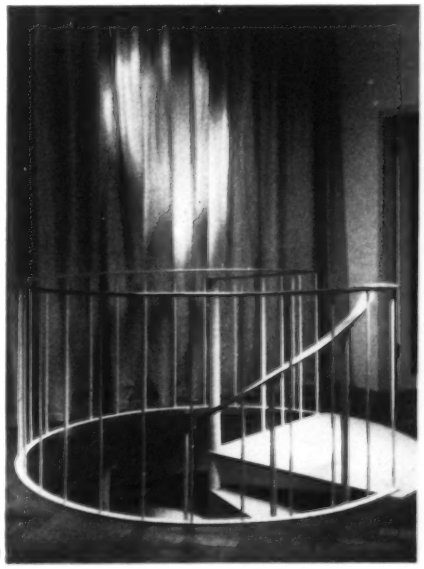
7 and 8, two views of the entrance and corridor side of the showroom of No. 46. The tall, narrow glazing, though unusual in British practice, is not unknown in France where it is highly regarded for its burglar-proof qualities.

second and fourth floors have sub-frames made of rolled steel channels and angles, painted black. The windows are steel painted white. The finish of the rear façade is partly rubbed concrete and partly bush hammered. The inside is mainly plastered; the staircase landings are clad with white tiles.

Two oil-fired boilers (one in each building) provide hot water for the radiators of the heating system and also heat the indirect hot-water cylinder of the domestic hot-water supply. The indirect hot-water cylinder is also provided with an electric immersion heater for use in the summer, when the oil burners are shut off. The engineers were Ove Arup and Partners (assistant—R. Hobbs) and the quantity surveyors were Davis, Belfield and Everest.

9

9. the work side of the reception/telephonist desk, showing the various work-surfaces, pigeon holes and shelves whose arrangement for operational convenience explains the seemingly abstract pattern of openings visible on the street side of this desk in 6. 10. 11 and 12: three details of the spiral staircase, cantilevered from a central steel tube, which connects the upper and lower showrooms in No. 46. A simi ar staircase, in the equivalent posi ion, is provided in the other half of the building, and serves to open up the basement as additional showroom space.



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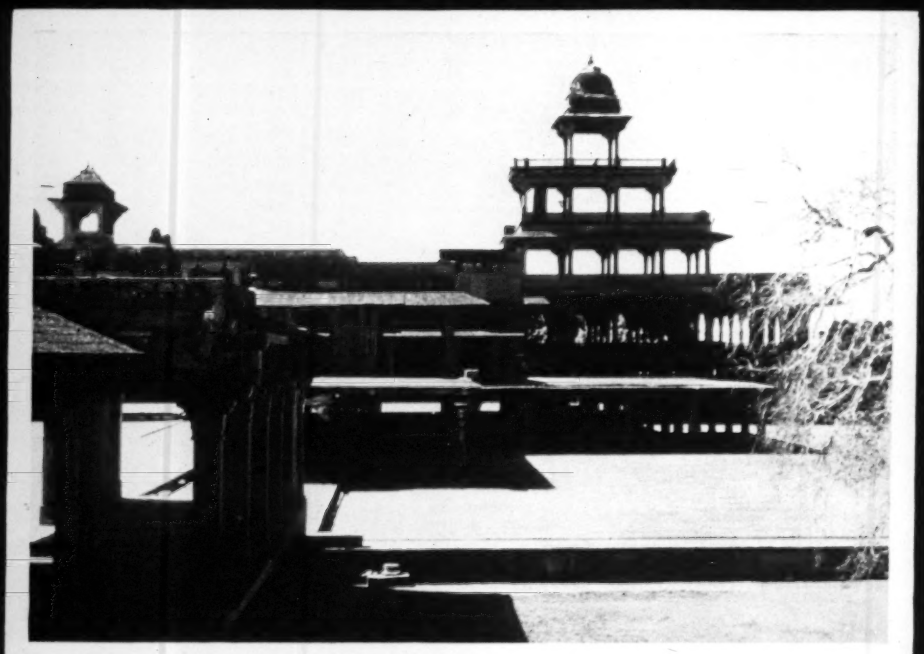
11

12



Conceived by Akbar the Great as an ideal setting for his court, Fatehpur Sikri is a complex of courtyards, open verandahs, and shade-buildings such as the five-tiered Panch Mahal, seen above from the viewpoint indicated in the map on page 126. Although the whole scheme was completed in four years, its plan has—to Western eyes—an accidental appearance, without any dominant planning axis. Jaqueline Tyrwhitt suggests, in the article that begins opposite, that it was designed to be seen panoramically by a moving viewer, much as Hugh Casson described Peking in the Architectural Review for February 1955.

FATHPUR SÎKRÎ.—THE PANCH MAHAL.

THE WEST ELEVATION.

Jaqueline Tyrwhitt

FATEHPUR SIKRI

'Regulations for house building in general are necessary: they are required for the comfort of the army and are a source of splendour for the Government. People that are attached to the world will collect in towns, without which there would be no progress. Hence His Majesty (Akbar the Great, 1542–1605) plans splendid edifices, and dresses the work of his mind and heart in the garment of stone and clay. Thus mighty fortresses have been raised, which protect the timid, frighten the rebellious and please the obedient. Delightful villas and imposing towers have also been built. They afford excellent protection against cold and rain, provide for the Princesses of the Harem and are conducive to that dignity which is so necessary for wordly power. Everywhere hostels have been built, which are the comfort of travellers and the asylum of poor strangers. Many tanks and wells are being dug for the benefit of men and the improvement of the soil. Schools and places of worship are being founded, and the triumphal arch of knowledge is newly adorned. His Majesty has enquired into every detail connected with this department which is so difficult to be managed and requires such large sums. He has passed new regulations, kindled the lamp of honesty, and put a stock of practical knowledge into the hands of simple and inexperienced men.'

(*From 'Ain i Akbari' translated by H. Blochmann*)

Twenty-three miles from Agra in India, with its Taj Mahal, lies Fatehpur Sikri, a city built in sandstone the colours of the dying sunset. You approach it in silence, for it has been deserted for over 200 years, but, immediately on entering the core of the city—the Mahal-i-Khas—the heart is uplifted, the eye entranced. One experiences a rare sensation of freedom and repose: an invitation to step forward buoyantly and, at the same time, to loiter luxuriously. Wherever the eye turns, the view is held, but at every step it changes. A seemingly solid background wall of stone is later perceived as a transparent screen. But nowhere is there a fixed centre: nowhere a point from which the observer can dominate the whole. Equally nowhere does he stand conspicuously removed from the centre—a spectator in the wings. From the moment he steps within this urban core, he becomes an intimate part of a scene which does not impose itself upon him, but discloses itself gradually to him, at his own pace and according to his own pleasure.

The Mahal-i-Khas was the core of a city of perhaps 50,000 people. This core is a 'place' somewhat larger than the Piazza San Marco in Venice, and, like it, is framed by buildings and openings as well as having buildings standing within it, as objects both dimensioning its own space and being set off by it. Despite un-western details of architectural ornament the dimensions of the spaces and the organization of the transparent buildings are so much in tune with our present-day conceptions of urban space—the interplay of solid and void, freedom and enclosure, transparency and repose—that I determined to secure some measured drawings.

In 1889, E. W. Smith of the Archæological Survey Department of India spent four winter seasons making laboriously exact measured drawings of almost every detail of the main buildings. His meticulous work was published in Volume 18 of the Reports to the Archæological Survey of India. Edmund Smith was interested in the curious and intriguing admixture of Moslem and Hindoo architectural mannerisms; in the intricate patterns of the delicately carved traceries; in the romantic legends attached to various of the structures. He at no time refers to the architectural purpose of any structure, nor to the plastic organization of the area. His nineteenth-century eyes selected their own aspects of Fatehpur Sikri, but his 'exhaustive and final survey' of the city seems strangely incomplete to our twentieth-century vision (see West Elevation of the Panch Mahal, opposite). Despite the beauty and individuality of many of the buildings—exceptional even when compared with other great achievements of their own period—the thing that first strikes the contemporary observer is their spatial composition, and the close relation this has to his own thinking.

Nothing in this deserted city of Fatehpur Sikri is fortuitous, and none of the effects is due either to the accretions of time or to its ravages. The city was built in the space of four years or so by Akbar the Magnificent, around 1570, and was deserted, but not destroyed, some twenty years later.

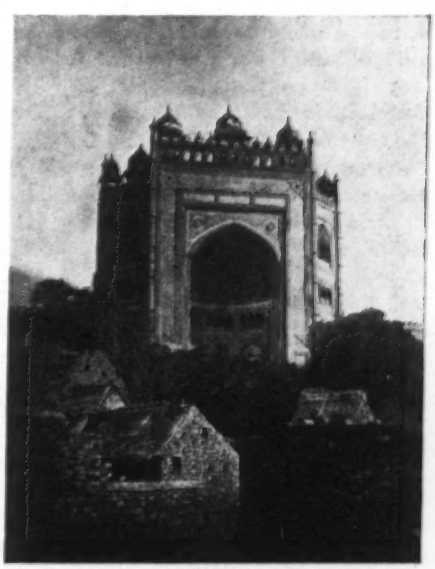
Akbar was 28 when he made the decision to build his new capital city upon the bare hill site of Fatehpur Sikri. He began to live there immediately, took the greatest interest in its development and spared neither money nor pains in its embellishment. Within a few years he received there a deputation of merchants from London who reported that 'Agra and Fatehpur are very great cities, either of them greater than London.' They were astonished at the richness and refinement of everything they saw and added that the city was 'a great resort of merchants from Persia and out of India with very much merchandise of silk and cloth and of precious stones, both rubies, diamonds and pearls.' Akbar was not only a highly cultured man, but also an extremely wealthy monarch. It has been computed that his revenue, at the time of his death, was equivalent to twenty million pounds sterling, whereas that of his contemporary, Queen Elizabeth of England, was about a quarter of one million pounds.

The capital area of Fatehpur Sikri includes far more than the Mahal-i-Khas. There is an exceptionally magnificent Mosque with a tremendous gateway, the High Gateway of Victory (see below); a sequence of fine palaces, a hospital, record office, elaborate 'turkish' baths, and the large and ornate tomb of a Moslem saint, who is said to have foretold correctly the birth of Akbar's long-awaited heir.

Adjacent to the Mahal-i-Khas is another great open space in front of the Diwan-i-Am or Place of Public Audience. This was the gathering place of the people, where public petitions were presented to the Emperor and public announcements made. It seems it also served as a sort of hippodrome where parades were held and animal contests took place.*

Together these two squares formed the core of the city—the gathering place of the people and the gathering place of the court. It is here that the greatest refinement was exercised in the disposition of the structures and the resultant modelling

*Stuart Piggot: "Some Ancient Cities of India" – Oxford University Press.



The great gateway of Fatehpur Sikri, one of the many notable buildings there that stand apart from the Mahal-i-Khas, illustrated on the next pages.

of the space is as subtle and as direct as the brilliant mind of their creator.

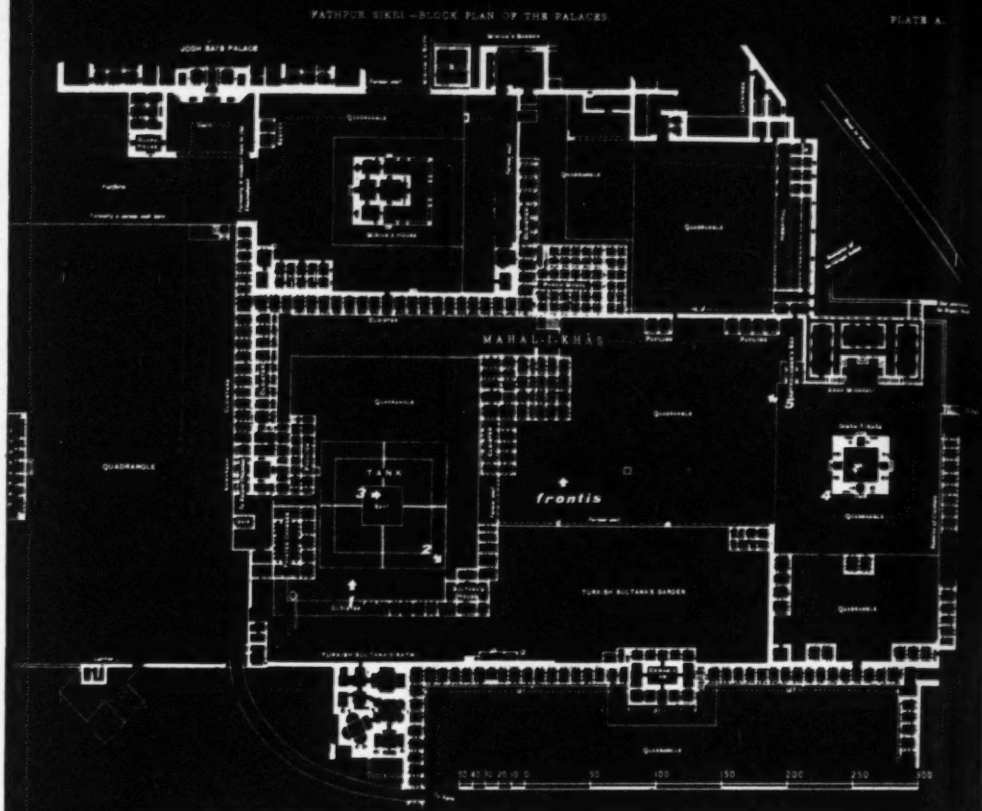
The area of the Mahal-i-Khas is a great rectangle approximately 550 feet by 272, interrupted by a simple transparent building which is said to have served as a sort of meeting place—or even a school—for the ladies of the court (Akbar had a large harem). The smaller southern division of the rectangle is largely occupied by a pool of water almost 100 feet square, in the centre of which is a square island approached by four narrow gangways.

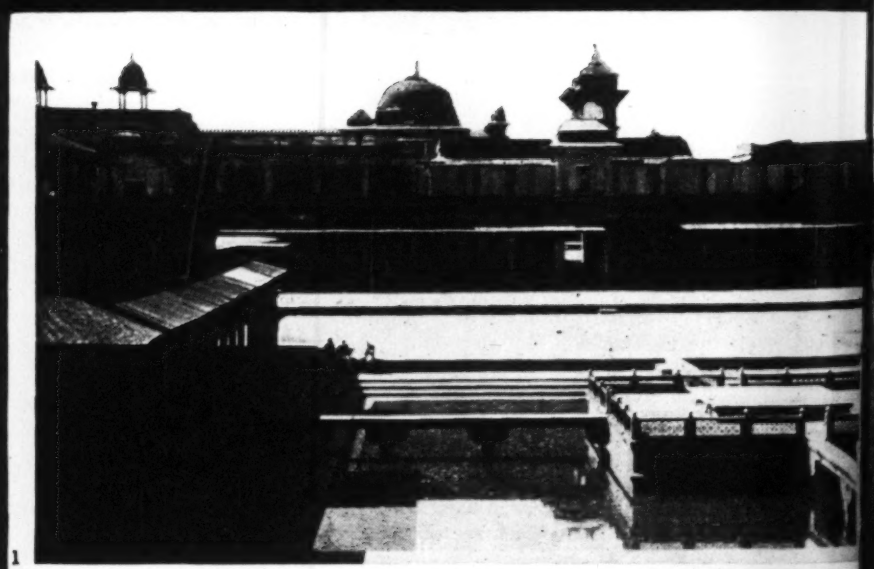
The larger northern division is dominated by a strange and bold, almost cubical, structure, solid and yet transparent, and surmounted with turrets which funnel cool air down to the ground floor. This is the Hall of Private Assembly—the Diwan-i-Khas, 3. The interior, 4, of the building is open but for a single central column, elaborately carved, which supports a large circular stone tray linked to galleries around the walls by four radiating gangways. Here Akbar is said to have sat, hour after hour and day after day, disputing on the nature of the state and of religion with his counsellors who sat around the gallery. The surrounding windows permit the eye to range widely over the country-side, and the building is designed to provide a circulating current of cooling air.

Almost central along the western wall of the Mahal-i-Khas rises the Panch Mahal (frontispiece page 124, and 5), an enchanting structure of five superimposed pavilions built of 170 columns. This is linked by a covered walk to other buildings, including the Khwabgah, or private dwelling quarters of Akbar himself at the south end of the Mahal-i-Khas and the charming quarters of one of his wives along the eastern side. This building, usually known as the House of the Turkish Sultana, 2, is a simple little structure whose every surface is covered with delicate carving in low relief. In its way it is an Indian version of Marie Antoinette's rural cottages at Versailles, the outer surface of the stone roofing slabs, for example, being carved to represent simple half-round 'cottage' tiles, and the undersides to depict a panelled wood ceiling. Much of the surface decoration of this dwelling shows a strong Chinese influence, and this is again evident in the 'painted chamber' of the Khwabgah. Despite its extreme elegance, the Turkish Sultana's 'house' contains only one 'room,' which measures just under thirteen-and-a-half feet square. This is but a fraction of the size of the lady's bath house, some 100 ft. distant, which measures 58 ft. by 70 ft.

It is difficult to describe the dwelling quarters of either Akbar or his lady as 'houses' in the western sense of the word. The normal western idea of a house is a structure containing a number of box-like

[*continued on page* 128

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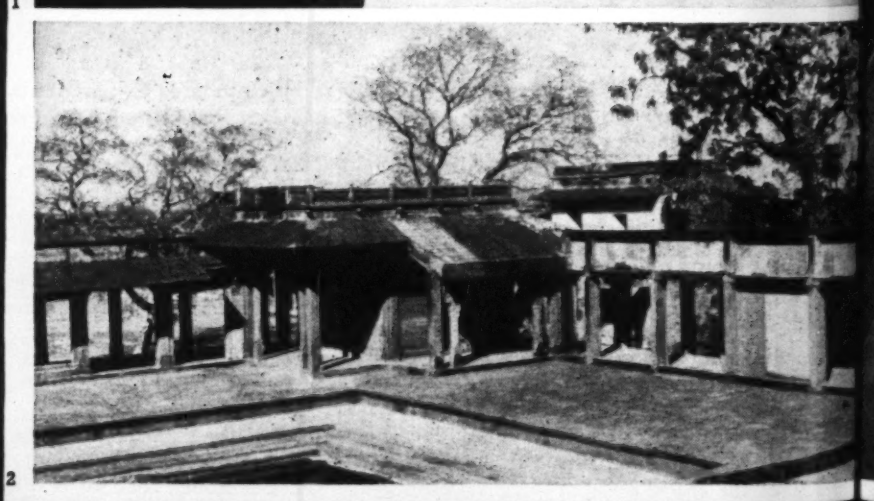
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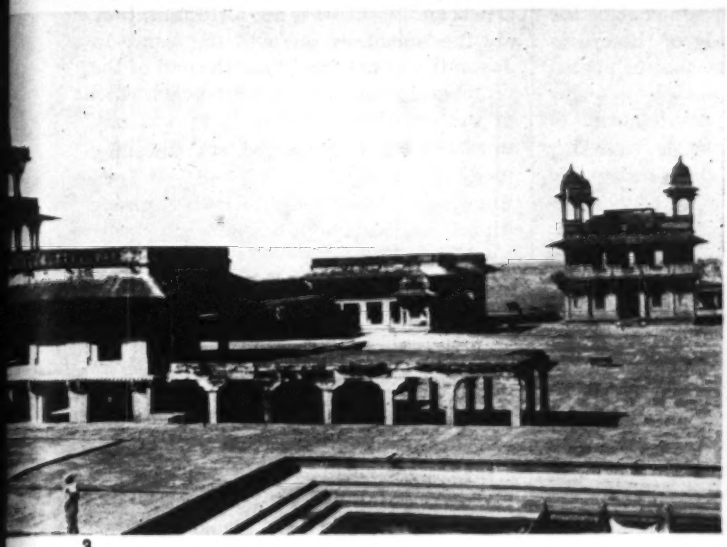
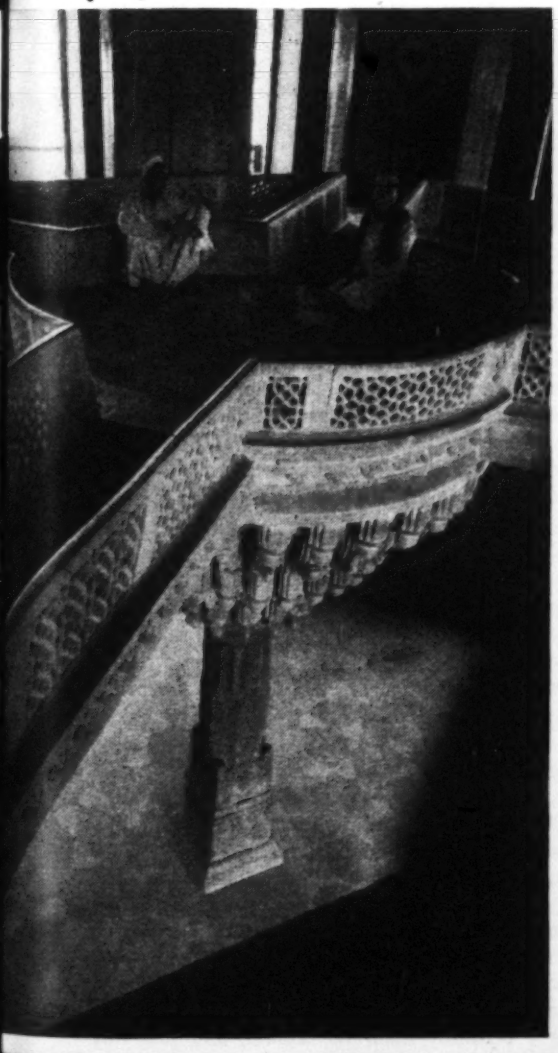


3

5

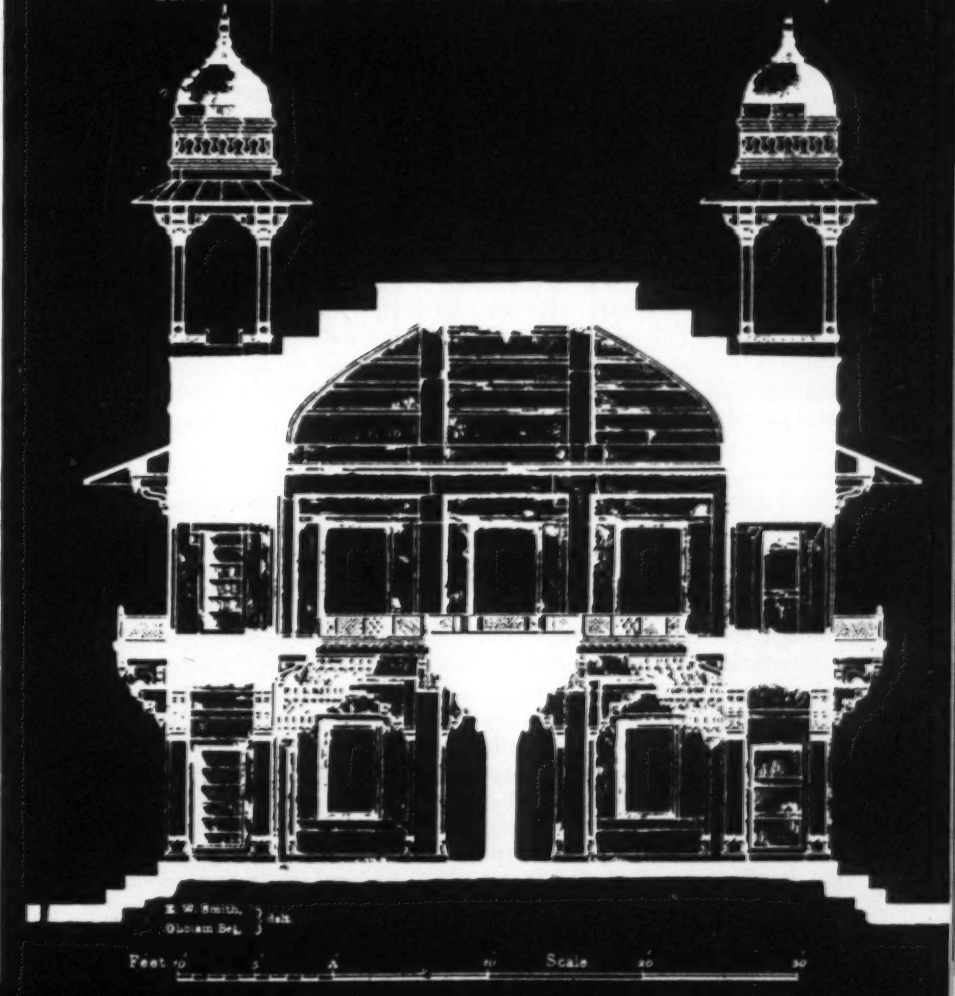
The plan opposite, of the Mahal-i-Khas and the partially-enclosed quadrangles into which it is sub-divided, shows the viewpoints of the illustrations on these two pages. Three of them are from around the tank in the smaller court, 1, opposite, towards the dome of Miriam's house, parallel with the most-nearly-axial piece of planning in the whole scheme; 2, towards the tiny house of the Turkish Sultana in the corner of the cloister; and 3, on this page, looking across three quadrangles to the Diwan-i-Khas, whose remarkable interior is seen below in 4, accompanied by a section taken from E. W. Smith's careful nineteenth-century survey of Fatehpur Sikri. The remaining view, 5, typifies the un-axial planning of the Mahal-i-Khas area, and looks from Diwan courtyard, marked by a two-step change in level, down the long colonnade below the Panch Mahal taking in the dome of Miriam's house once more.

4



FAṬHPUR SÎKRÎ.—THE DÎWAN-Î-KHÂS.

SECTION THROUGH THE CENTRE OF THE BUILDING FROM WEST TO EAST.



continued from page 126]

enclosures or rooms, each bounded by four walls and a ceiling, these being conceived as flat opaque surfaces pierced by windows and doors that can be opened and closed at will.

The concept was foreign to northern India before the invasion of western ideas. In the difficult climate of this area the minimum area required for year-round existence is not a single 'room' in the western sense, but three different types of private space. The first essential is an open court, or roof-top, which serves as a general living space throughout the bright dry days of winter and as a sleeping area during the oppressively hot summer nights, when every wall emits all the heat it has absorbed during the day—like the wall of a baking oven. The second essential space is roofed but unwalled (though it may take the compromise form of a veranda). Here one lives and sleeps throughout the steamy heat of the rainy season, open to every slight and shifting breeze. The third essential space—the smallest and least frequently used—is a completely enclosed, doubled-walled and double-roofed box, into which no sunlight can ever penetrate. Here at mid-day one can take cool refuge from the blazing summer heat, and here one can retire for warmth during the chilly nights of winter. This then is the only one of the three spaces that corresponds to the western 'room' and it finds its equivalent in the inner sanctum of the Turkish Sultana's dwelling, its walls screened by verandas. Indian furniture is light and portable: a charpoy (string bed), cushions and a low table are all that is needed. Cooking also is usually done in the open.

The spaces and structures that compose the Mahal-i-Khas together form a highly refined living, sleeping and working environment for a number of exceptionally cultured people living in a torrid climate. Even the rising pavilions of the Panch Mahal are not a fantastic whimsy, but the product of a creative imagination—science become art. On one or other of these tapering terraces Akbar could sit at ease with his ministers or with his ladies even upon grimmest evenings of summer.

Perhaps the supreme quality of the Mahal-i-Khas is its proportioning of space. Although several of the buildings themselves are symmetrical in design, their spatial setting is never axial. While it is clear at first glance that this is an ordered composition, one looks in vain for the key to it in terms of western academic art.

It is extremely difficult for us of the west to get away from the rules of the accepted vision of our western culture and to realize, even intellectually, that this is not the only way of looking at things. For instance, our eyes in the west have for 500 years been conditioned, even governed, by the concept of the single viewpoint. This is, however, peculiar to the western world, where it followed the development of the science of optics: the study of the eye as an inanimate piece of mechanism pinned down upon the board of the scientist. The optical result was the development of linear perspective and the single 'vanishing point': the penetration of the landscape by a single piercing eye—my eye, my dominating eye. This created a revolution in our way of perceiving the objects around us and in the rational organization of landscape—whether rural or urban. The organized 'view' came into being: the penetration of infinity by means of a guided line—often an avenue of trees or a symmetrical street. With this came the 'vista,' the termination of the organized view by an object of interest, often the elaborately symmetrical façade of a large building that could only rightly be beheld from a central position at some distance from it. All other views were, consciously and unconsciously, accepted as 'wrong': 'This is the place to see it from.'

There are several fairly obvious resting places within the Mahal-i-Khas, the most notable being perhaps the roof of Akbar's private apartments, the terraces of the Panch Mahal (the five-storeyed Pleasure Pavilion), the entrance to the Dewan-i-Khas (the Hall of Private Audience) and the balcony overlooking the great outer court, the Dewan-i-Am (Hall of Public Audience). From each of these stations one is presented with a carefully balanced panoramic scene: not with a central objective it is true, but with a single co-ordinated sweep or vision or 'eye-full.' In each of these cases, the scene has a transparent centre and equivalent, but not identical, objects of interest bounding the view to right and left. For instance, from the entrance to the Dewan-i-Khas one glimpses in the centre a square pool of water through the transparent columns of an intervening building, flanked to the right by the fantastic hovering terraces of the Panch Mahal and to the left by the curved roof of the state balcony overlooking the Dewan-i-Am. From the terraces of the Panch Mahal, the centre is occupied by the space of the Mahal-i-Khas framed by the flamboyant Dewan-i-Khas on the left and the rising structures of Akbar's private apartments on the right.

A panoramic field of vision, moving slowly through some 60 deg. or 90 deg., would seem to be nearer to the visual conception underlying this composition than a single piercing view that demands a central point of interest.

It is now nearly half a century since western artists and scientists started to break away from the tyranny of the static viewpoint—the conception of a static object in a static universe—to rediscover the importance of vision in motion. This close relationship of the discoveries of artists and scientists is not fortuitous: they are fundamentally one and the same. In Japan it was not until near the end of the nineteenth century (after the penetration of western thought) that there was any word in their language for 'art' (meaning 'fine art'). Until then 'art' had just been 'the way of doing things,' whether solving a problem, building a house or preparing tea. There was 'the way,' which was difficult and demanded imaginative intelligence and concentration, and there were poor substitutes of 'the way.' The 'artist' as an outcast of normal society—a mere 'Bohemian' or gypsy—is quite a recent western invention.

Evidences of the fact that our western vision is changing exist all around us, but most of them are left outside the realm of conscious rationalization, because we have not yet learnt to organize them intellectually.

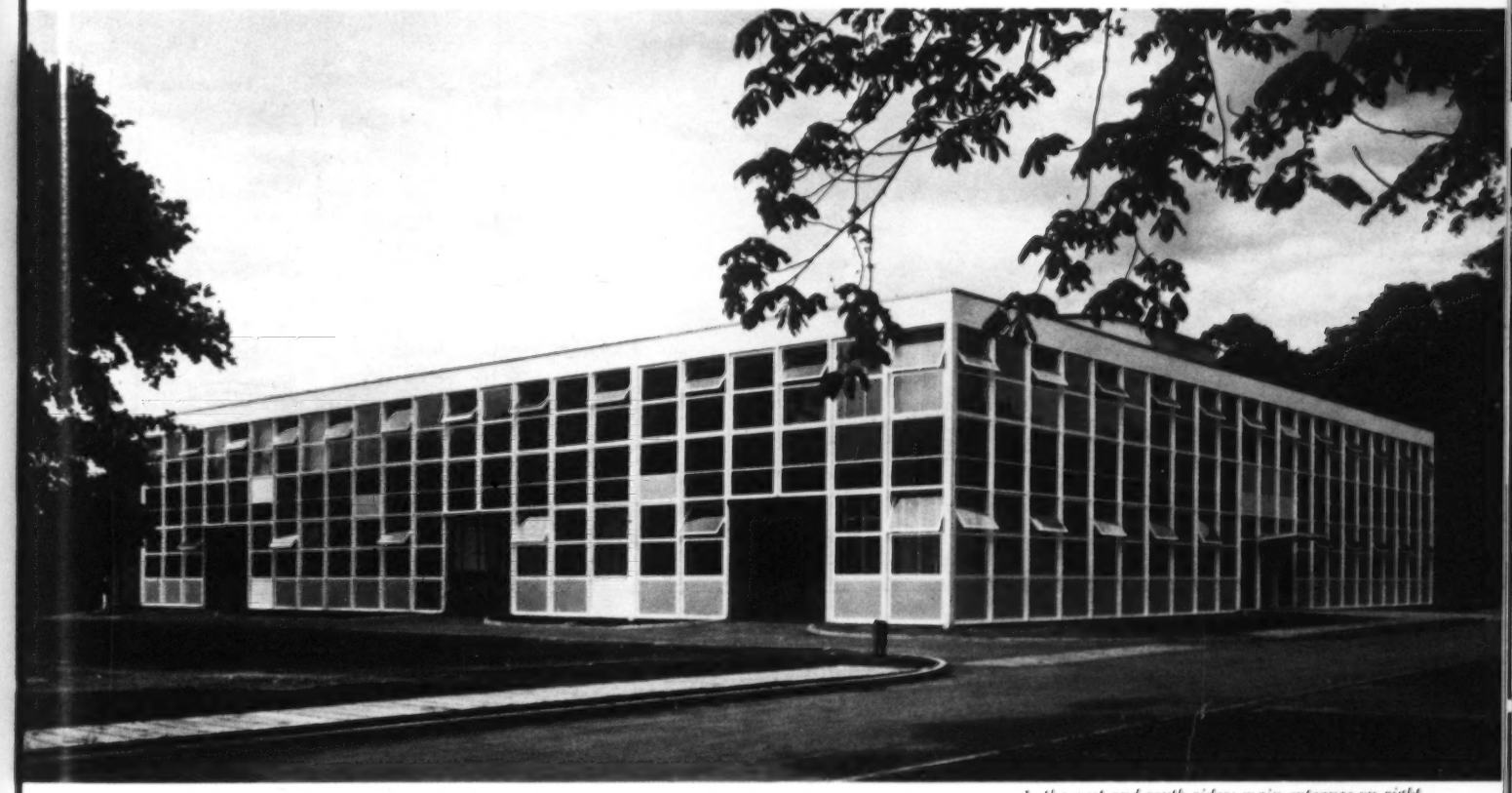
The moving eye is closely with us in the cinema and on television. We see the scene from a certain viewpoint, then go nearer—not gradually but in one swoop—and look at it again from a totally different angle. We accept this readily, because this is the way our eye really works: we can at will change its focus and alter its position. But we seldom connote this with the changed appearance of contemporary painting in which significant features of these different viewpoints are often presented to us superimposed upon a single sheet: not in a time sequence but in juxtaposed fragments as in fact they are recorded by our mental vision.

Today we stand before Versailles and are outwardly—and rightly—impressed (but inwardly we find it rather boring). We move along a city shopping street at night and outwardly—and rightly—confess it is a chaotic mess (but inwardly we find it rather exhilarating). Here is our contemporary urban planning problem: how to find the key to an intellectual system that will enable us to rationalize the organization of buildings, colour and movement in space without having to rely solely upon introspective intuition ('I feel it to be right') or upon obsolete rules based on the limited optical science of the Renaissance—the static viewpoint.

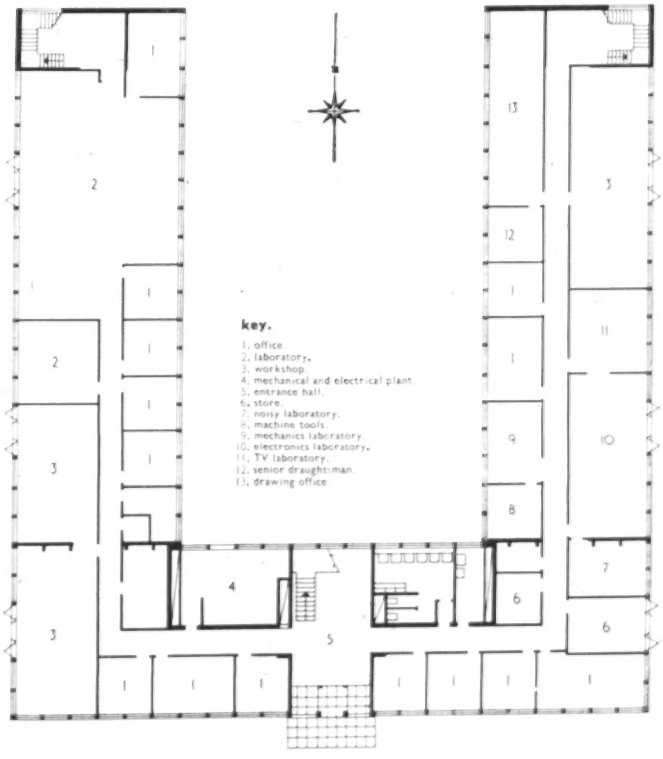
It is possible that it is the view presented to a moving eye that gives the modern spectator such a feeling of intriguing relaxation at Fatehpur Sikri. But another key to its composition lies quite certainly in the fact that all dimensions, whether of the fashioning of spaces by the disposition of structures or of the spacing of columns, or the size and shape of openings and panels, must have been adjusted to a regulating scale of proportions based certainly upon the square, and probably upon the 'Golden Section.'

current architecture

recent buildings of interest briefly illustrated



1, *the west and south sides; main entrance on right.*



ground floor.

40 20 0 20

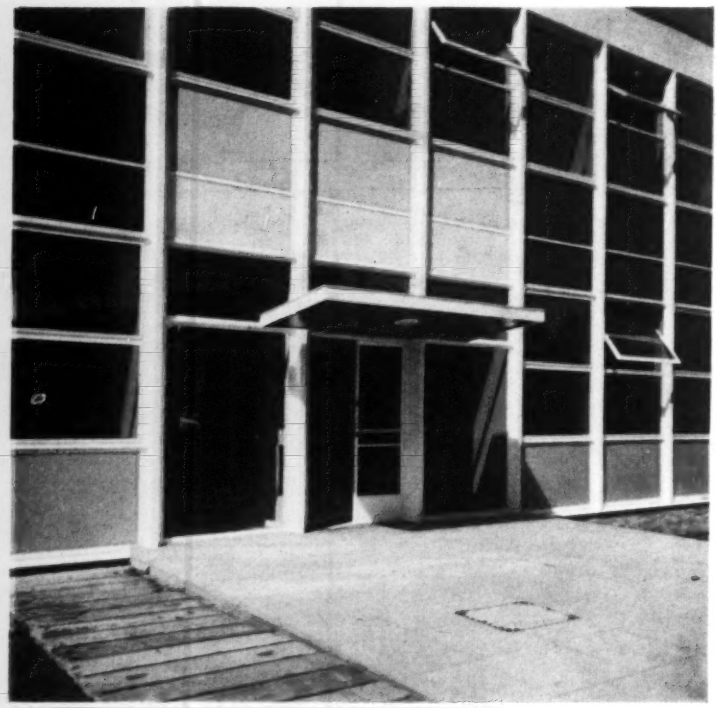
scale of feet

LABORATORIES AT FARNBOROUGH, HANTS

ARCHITECT, MINISTRY OF WORKS

SENIOR ARCHITECT, S. G. PAGE

This building at RAE Farnborough is required to provide approximately 20,000 ft. of laboratory space for electronics research. Maximum flexibility was needed to meet changing laboratory layout, hence the U-shaped plan with maximum natural lighting, providing either a clear 32 ft. span for full-width laboratories, or a 4 ft. 6 in. centre corridor with 11 ft. deep offices on one side and 16 ft. deep secondary laboratories, test rooms, etc. on the other, or a combination of both as shown on the plan. A 5 ft. 6 in. module provides minimum working intervals between bench units; and in the offices 11 ft. clear between partitions proved to be a suitable minimum for standard back-to-back tables with chairs. A diaphragm type of r.c. frame was used, with the precast columns function ing purely as props to the first floor and roof, all lateral stiffness and stability being provided by diaphragm floors and walls at chosen positions. Columns were thus reduced to a minimum size and appear only as window mullions on the elevation, also providing fixing positions for re-arrangement of internal partitions as required. The floor consists of light precast r.c. beams, which are prestressed to achieve an overall depth of 18 inches whilst eliminating internal columns. These beams carry the 3 in. in-situ



2, main entrance. The entrance hall inside has grey P.V.C. flooring with a scattering of U-shaped motifs representing the plan of the building in white, blue and red.

Laboratories at Farnborough, Hants

r.c. floor and use black corrugated iron as a cheap and convenient permanent shuttering. The columns are jointed at first floor level by means of bolted scarf joints and stiffened by in-situ wall panels. The external cladding uses double glazing throughout and coloured vitreous enamel, steel-faced, as infill between windows of the ground and first floors. The basic panel colours are buff to the ground floor and black to the first floor with an asymmetric scattering of blue, white, yellow and red. Heating is from a steam-to-water calorifier by the Frenger system of heated ceiling panels suspended from small pressed steel channels cast in beam soffits providing a surface temperature of 85 F. under full output conditions. Lighting flexibility of tungsten and fluorescent fittings is maintained by the use of trunking incorporated in the suspended ceiling on the 5 ft. 6 in. modules. All the normal laboratory bench services, i.e. electric power, compressed air, gas, hot and cold water, and drainage, are housed in a special service casing below sill level. The hall has a 9 ft. by 6 ft. mural in oils on wallboard by P. A. Jobson depicting in abstract form research work in an electronics laboratory dealing with aircraft development.

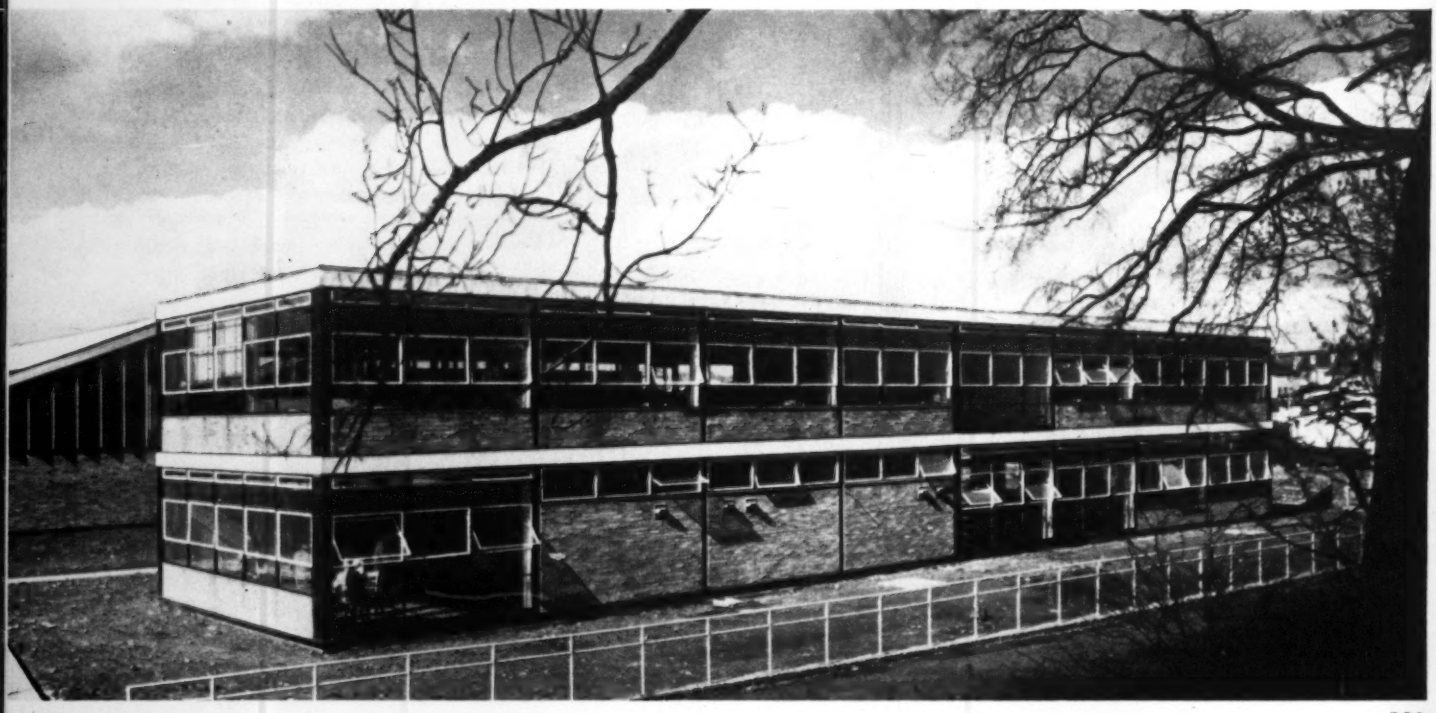
OFFICES AND WAREHOUSE AT NOTTINGHAM

ARCHITECTS: J. M. AUSTIN-SMITH AND PARTNERS

PARTNER-IN-CHARGE: P. J. LORD

ASSISTANT ARCHITECTS: R. SCOTT BROWN AND P. C. HARRISON

3, administration block from south-east with warehouse behind. The three ground floor bays with brick infill enclose kitchen and lavatories.



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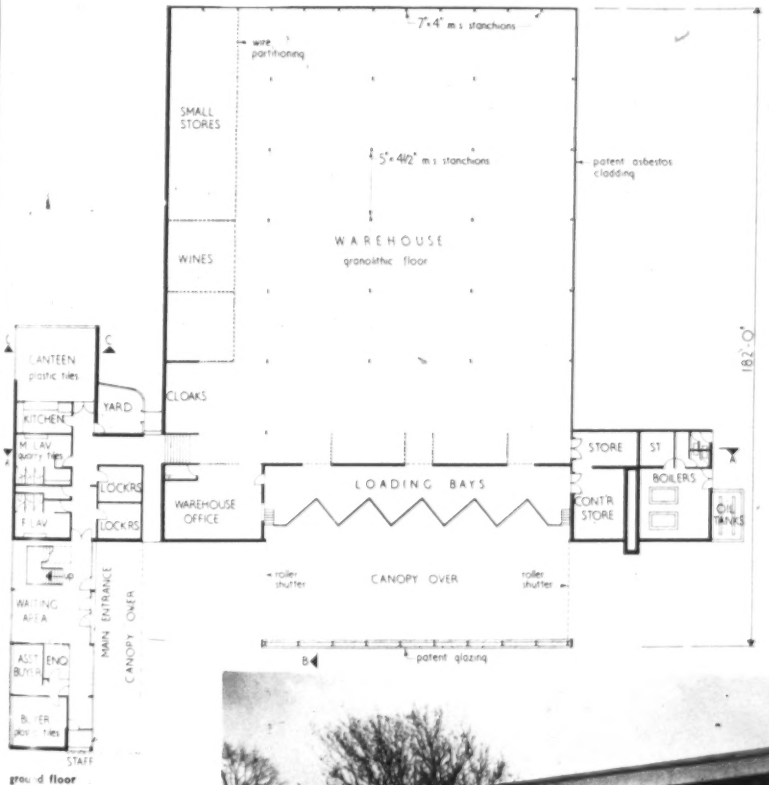


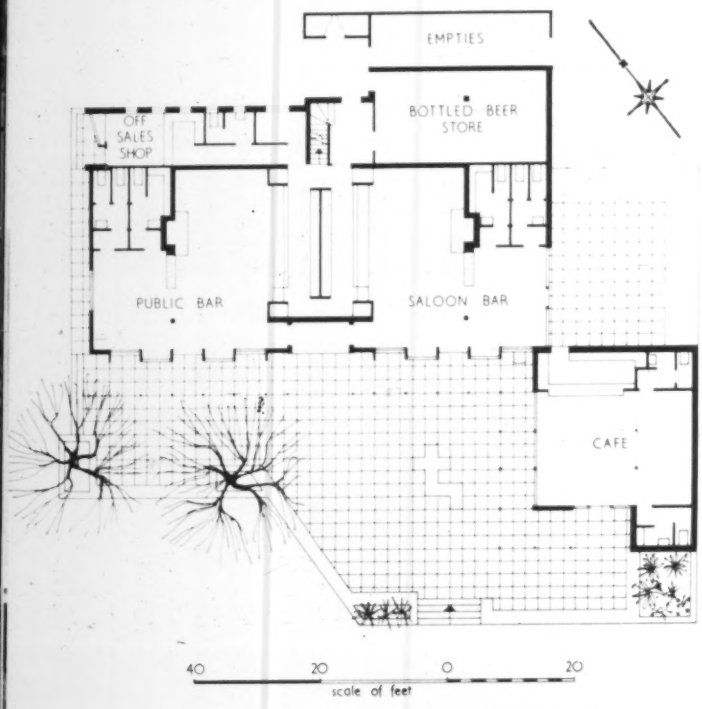
ground floor
scale 1/48 in. = 1ft

4, main entrance from Wigman Road with warehouse landing bay on the right; the open ends are each fitted with a mechanically operated roller shutter for garage security. 5, pedestrian entrance to the administration block, leading to covered access to offices and cloakrooms.

This is a grocery warehouse and administration offices in Wigman Road on the Bilborough estate NW of Nottingham. Both units are capable of linear extension; the warehouse, boiler house and loading bay (enclosed for security reasons) are built in steel with asbestos roof and wall cladding; the offices are of r.c. construction with brick infill, with the columns slate-faced and the edge beams fairfaced and painted white. The roof of the administration building is a prestressed composite slab of concrete and clay pot with three-ply bituminous felt covering. Inside, the administration block is faced with exposed sand-lime fairface brickwork; the main staircase is made up of welded steel sections with polished hardwood string facings, handrails and treads, and has armour-plate glass panels between painted mild steel balusters.

5

6, outside terrace from the South; public bar on the left.



PUB AT CRAWLEY NEW TOWN

ARCHITECTS, MUSMAN AND COUSENS

The White Knight is in the Pound Hill area of Crawley New Town to the east of the shopping centre. The plan is L-shaped enclosing a paved terrace for outdoor drinking incorporating two fully-grown oak trees. The long side of the L contains public and saloon bars, each with a large raised fireplace; the short side is single storey and contains the unlicensed coffee room. In the corner there is a small enclosed garden reached through the saloon bar. The walls are load-bearing brick with grey sandfaced facings; the floor is r.c. and the roof timber covered with copper (pitched roof) and 3-layer bituminous felt (flat roofs). The front elevation of the first floor is vertical cedar boarding; both bars have ceilings and some walls panelled in Douglas fir boarding. The pub sign — a chess figure of a White Knight — was designed by the architects; as were all the interior fittings and decor. The chess motif also appears in a decorative panel at the entrance to the bars, made of alternate slabs of light and dark green slate with superimposed metal silhouettes of chessmen arranged in a classic chess problem.

7, public bar and 8, saloon bar each approx 620 sq. ft. with linoleum tiles and brass bar fittings.

7

8

BOOKS

SIMPSON REVISED

Hugh Plommer, ANCIENT AND CLASSICAL ARCHITECTURE (*Vol. I of Simpson's* HISTORY OF ARCHITECTURAL DEVELOPMENT, *revised*), *Longmans, Green and Co., London—New York—Toronto*, 1956. 35*s*.

Volume I of Simpson's *History of Architectural Development* (1905) now appears in an expanded format with the post-classical portion relegated to a second volume. Thus the first portion of the original (then 162 pages, 102 illustrations) is now a volume with 384 pages and 159 illustrations. It is divided into three parts, Architecture before Greece (60 illustrations), Greece (35 illustrations), and Architecture after Greece (64 illustrations), and each of these in turn into three chapters, terminated by a final tenth chapter on 'The Transformation of Classical Architecture.' In fitting the various styles into the compartmentation there are minor difficulties, with the Achaemenid architecture of Persia separated from its immediate forerunners in Assyria and later Babylonia by 122 pages on Greek, and with Greek Hellenistic architecture placed in 'Architecture after Greece' and thus separated from the main stream by 17 pages on Persian and Etruscan. It would have been preferable to have observed geographical and cultural continuity.

While the illustrations have been brought up to date and old errors eliminated, new errors have crept in. Thus fig. 16 is reproduced from fig. 15 of the old edition, but the old correct lettering has been deleted and the new caption 'Small Temple, Abu Simbel' (also on page 39) has nothing in common with those rock-cut temples of the upper Nile, it being in reality the masonry peripteral temple much farther north at Elephantine demolished in 1822. The piece shown as Sargon's 'Pavement at Khorsabad' (plate 6) is from his son's palace at Koyunjik (Nineveh), actually in the British Museum. Fig. 63, entitled 'Double Stoa, Magnesia,' is double only in the sense that it shows two pedestals, that of the Nike of Paeonius at Olympia (right side up) and a Roman statue pedestal (upside down); it was obviously reproduced from figs. 35–36 of Marquand's *Greek Architecture*, where the same phenomenon occurs, though the author states that his intended fig. 63 comes from Marquand's fig. 361. Similar lack of co-ordination may be responsible for references to Schliemann for a Doric capital at Tiryns (page 184) and to Robertson for the 'reconstruction (of house XXXIII at Priene) by von Gerkan' (page 202), whereas these very illustrations appear as figs. 50 and 65, the latter showing the signature of Wilberg rather than von Gerkan.

The author states (page xix) that he has 'attempted, wherever possible, to give scales in both feet and metres.' Actually, of 65 plans and sections, only 13 show both scales, while 19 are only in feet, 33 only in metres. Since feet are normally used throughout the text, the metric measurements on pages 57, 80, 87 and 151 should have been converted.

The author speaks also of ancient Greek feet, but with little success (pages 173–174) though objecting to the reviewer's reductions to a Doric standard of 12$\frac{7}{8}$ inches and an Ionic standard of 11$\frac{1}{8}$ inches (nearly identical with the Roman). Thus for the Parthenon he prefers Stuart's antiquated theory of 1788 that the stylobate measured 100 by 225 Greek feet of 12$\frac{1}{2}$ inches (controverted by the Erechtheum inscriptions). And for the temple of Hera Lacinia at Acragas he substitutes a new theory that it was laid out in English feet; but his measurements should be enlarged by the amounts shown in parentheses: axial spacing of columns 10 ft. (add 2$\frac{1}{2}$ in. fronts and $\frac{1}{2}$ in. flanks); wall thickness 3 ft. (add $\frac{1}{2}$ in.); width of cella 25 ft. (add 1$\frac{1}{2}$ in.); frieze height 3 ft. 4 in. (add 3$\frac{1}{2}$ in.); triglyph width 2 ft. (add $\frac{1}{2}$ in.); metope width 3 ft. (add 1$\frac{1}{2}$ in. fronts and $\frac{1}{2}$ in. flanks). It is obvious that if such latitude is permitted there can be no reliable metrological analysis. Acceptance of the Doric unit might have shown him that the 'strange' excess of interval over column diameter pervading Attic Doric design of the Periclean age, about 0.50 m. (which he accepts and baptizes as the 'Dinsmoor Law' (pages 132, 175), was theoretically (as close as the designed ratios would permit) 1$\frac{1}{2}$ Doric feet, the width of a man across the shoulders being used as a means of giving scale to the temples, as the reviewer had set forth long ago (*Architecture*, New York, 1923, pages 241–242).

The following errors may be pointed out in the pre-Greek section. The abaci of the columns at Beni Hasan are not 'flush with the smooth architrave' above (page 27), but project (cf. plate 3). The assertion that 'Proto-Doric' columns do not occur in the New Empire except at Deir el-Bahari (page 27) overlooks such examples as those of Thothmes III at Karnak, of Amenhotep III at Semneh, of Dynasty XIX at Beit Walli, etc. The characterization of the festival hall of Thothmes III in the temple at Karnak as a palace (page 41) is surprising. The Ptolemaic 'broken pylon' (page 43) should be 'broken lintel' (as on pages 44, 49). The lack of friezes of figures inlaid against dark stone backgrounds in Sumerian buildings (page 64) may be filled by those at Al 'Ubaid. And, while the author rightly supports the idea of sloping roofs on Aegean buildings of the northern megaron type, he interprets as a flat-roofed exception that at Lerna (page 86, no. 2) which nevertheless preserves the actual sloping mud packing, and also treats Tiryns as a flat-roofed exception regardless of its suggestive plan (page 88); the importance of settling this question in the ancestry of the Greek temple is obvious.

The discussion of the Greek Doric order and temple (pages 128–158) is filled with useful observations; but the perfection of Athenian workmanship is such that one dislikes to see it marred even by minor inaccuracies. A false picture is given by the statement that 'the intervals between foundation walls were often packed with polygonal masonry of large blocks, the whole forming a solid platform . . . carried down to solid rock, as in the Parthenon' (page 149); but the filling was normally merely packed earth, the Parthenon being abnormal in having a solid filling because of its peculiar situation, and this with ashlar not polygonal masonry. The undercutting of the steps at Sunium was not decorative in purpose (page 130); nor was the 'very small shallow sinking designed to frame a large central space, perhaps for frescoes' on the walls of the Propylaea (page 179); both are merely signs of unfinished work. The stylobate of the Parthenon does not rise above the floor behind (page 130, citing plate 9, where the effect is due to an optical illusion, a mediaeval gutter cut just behind the stylobate). Columns do not rest 'in the slightest of hollows on the surface of the stylobate' (page 149). Flutes are not usually three-centred arcs (page 131); in the Propylaea, for instance, they form one-sixth of a circle. The author does not seem to comprehend (page 150) the functions of the wooden empolia ('Dinsmoor seems to imply that the sharp corners of this cubical box . . . compelled the builders to place the next drum in its exact position') and of the poloi ('what is the use of so short a dowel?'). The vertical fascia under the geison mutules never projects 'slightly beyond the taenia of the triglyphs' (page 135), the reverse being the case; before mouldings were substituted (from the Propylaea onward) confused re-entrant angles at the corners were avoided by setting the fascia flush with the triglyph face and so receding behind its taenia. The statement that in the Parthenon the antefixes do not 'take the slightest notice of the triglyphs' (page 139) is in error; it was precisely in order to obtain this co-ordination that was devised the peculiar system described on the preceding page (first published, not by Orlandos in 1948, but by Penrose in 1859, the contribution by Orlandos being the greater width of the cover tiles behind the true antefixes).

There are also abnormal features in provincial Doric, some of which the author seems to have misunderstood. The favourite combination of materials in sixth-century temples of South Italy was not soft limestone for mouldings and hard white limestone for the rest (pages 112–113, 152–155), but sandstone for mouldings and soft limestone for the rest. The author's doubts as to the entablature of the Olympieum at Acragas (page 190), of which he did not happen to see the pieces (though every course was measured by Cockerell and others, including the reviewer), and his preference for locating the Giants inside the temple (pages 181, 190, 243) despite the clear evidence that they were outside, as well as his doubts as to the existence of pediments (pages 145–146) of which the actual pieces have been frequently discussed, would seem to be useless contradictions of observed facts. The absurd members on the pediment cornice at Crimisa are not 'mutules' (page 137), but regulae like those on an architrave. His predilection for 'Chinese roofs' (pages 136, 184), which the reviewer discards because the *editio princeps* at Paestum was shown in 1931 to be erroneous, and because all such restorations elsewhere are entirely without foundation (with a dubious exception at Calydon), is hardly justified.

Problems of ceiling and roof construction cause the author to indulge in numerous speculations. The sockets for purlins existing in many examples are ignored; he merely says that in the temple of Concord at Acragas the purlin sockets are mediaeval (page 147), whereas in reality there are two sets at different levels, one mediaeval and the other ancient. He apparently substitutes 'straddlers,' supporting the ridge beam directly on the heads of the rafters (page 147), a system not only controverted by the respective levels of the sockets (those for the rafters being in the layer above the ridge beam and purlins) but requiring tie-beams to avoid spreading (constituting trusses), which he admits were yet unknown in classical times (though on page 114 he speaks of 'roof trusses of the classical Greeks'). He eliminates the possibility of diagonally braced

beams, such as the Erechtheum is known to have employed, in larger temples, on the ground that they would be unsightly from below (pages 146–147), without realizing that they would have been invisibly placed above the ceiling (except in the Erechtheum). He believes that there would not be room, above the rafters, for battens such as are described in the Erechtheum inscription, so that the marble tiles must have rested directly on closely spaced rafters (page 152); but the rafter sockets are usually too far apart to permit this, and actual cuttings for battens are visible in the Propylaea. For the problematical Apollonium (G) at Selinus he offers two alternative cross-sections, both with 'compluviate roofs' (pages 143–145, fig. 49), of which he prefers that with only two storeys of internal columns, restoring the nave in either case as hypaethral. He argues that there could not have been a third storey because here the upper diameter would have been 'no more than 16 inches . . . an absurdly small upper diameter,' and also because 'a third colonnade would be so flimsy, so monstrous aesthetically . . . that it is at once desirable and possible to remove it.' This would seem to deny the evidence: both Hittorff (1824) and Hulot (1910) distinguished the actual capitals of the second and third tiers, the second being too small to belong to the first, the third smaller still and giving an upper diameter of 17¼ inches. The height of the three storeys can only be estimated; but it would not be incompatible with a horizontal ceiling, with plenty of room for roof construction above. Thus the hypaethral nave is not demonstrated in this case, and hardly serves as an argument for 'compluviate roofs' at Ephesus or in the Olympieum at Acragas (in both of which he encounters contrary evidence, pages 145–146, 166). Likewise at Bassae, where the author would prefer a hypaethral interior (pages 189, 279), the evidence is against him.

Among Ionic examples one can hardly say that 'the Attic (base) makes its appearance in the Athenian Stoa' at Delphi (page 170), since the middle member is not yet a scotia but a bell shape (cyma recta upside down). In the capitals of the Erechtheum it is stated that 'with good taste the designer suppressed the two palmettes in the angles of the volutes' (page 169); but their absence, at least in the north porch and probably also on the east, is due rather to the bad taste of marauders who pulled off the gold-plated bronze palmettes, leaving only their weathered shadows and the holes for attachment of their stems. Painted lilies are proposed for the pulvinus of the Propylaea capitals (pages 169, 187), such as could never have existed without leaving some traces. It is stated that Hermogenes at Teos and Magnesia 'rejected the Ionic diagonal capital' (page 264), without explaining how otherwise he could have turned the corner.

Among Corinthian examples, the author doubts the use of three Corinthian capitals instead of one at Bassae (page 189). In the Philippeum at Olympia, 'whose most fanciful features were given it by its German restorers,' he rejects the internal order of engaged Corinthian columns 'for which there seems to be no evidence' (page 194), regardless of the fact that these have actually been photographed (*Olympische Forschungen* I, 1944). The author adopts for the bed-moulding of the cornice of the Olympieum at Athens the blocks attributed to it by Penrose in 1888, rejecting the reviewer's identification of them in 1921 as capstones of the much earlier pedestal of Athena Promachos on the Acropolis (page 264), and unaware that the reviewer had found remains of the actual dentil course of the Olympieum.

More trivial is the statement that the Didymaeum near Miletus faces west like Ephesus (page 199), the opposite being the case; was Miletus perchance confused with Magnesia? And the inventor of perspective was not Agatharchides (page 209 twice, also index), but Agatharchus.

A final word about the writing of a brief textbook designed for students. It would seem that such a book should be as factual and impersonal as possible. Here, however, a hasty count of examples of the ubiquitous pronoun 'I' revealed a total of 105 (of which 21 in text and 84 in footnotes), usually followed by such personal attitudes as 'have seen (2), saw, cannot see (2), do not see, have not seen (2), could never detect, find (2), cannot find, did not find (2), could not find, never discovered, think (5), do not think, cannot think, know, do not know (3), infer, believe (2), suspect, wonder, gathered, do not understand (3), never understand, am not sure (2), am not certain (2), am doubtful, am inclined (2), am not inclined, am convinced, am not convinced, am not wholly convinced, am not satisfied, must admit (2), find myself persuaded, am not persuaded, cannot reconcile myself, had supposed, still hold, hope (2), consider (2), grant, agree (2), refuse (2), make no apology, do not feel qualified, and would like to rummage.' After many such repetitions one is tempted to ask, 'Who cares?' Nor should he, in such a book, impugn the integrity of contemporary scholars, be they Italian (pages 110, 147, 190, 222, 308, 325) or German (pages 194, 343), especially when the charges are as baseless as in the Olympieum at Acragas and the Philippeum at Olympia (where the author's failure to see the blocks was solely his own fault). Nor can a student be expected to benefit by the numerous tart innuendoes, such as 'passes too many confident remarks on the architecture of peoples outside his own limited field' (page 266).

William Bell Dinsmoor

EXHIBITIONS

In a review of the 1914 *exhibition of Les Indépendants, Arthur Cravan said of Robert Delaunay, the painter of prismatic discs,* that he had such a strikingly pig-like face that it was disappointing to find that he did not paint like a brute. I think Cravan might have recognized in Permeke's best paintings the kind of animality he had expected to find in Delaunay.

Permeke, who died in 1952 at the age of sixty-six, and whose formidable contribution to twentieth-century painting has been brought home to us by a handsome show at the Tate organized by the Arts Council, was, at least by abstract-expressionist standards, a genius: he emphasized the physical side of painting, and 'spread his paste' with gross relish. Indeed, it became quite obvious, after one had read Paul Haesaerts' description of Permeke, that the pictures could only have been painted by a thick-set, round-shouldered, bushy eyebrowed, stubby fingered, heavy footed, moodily hearty man.

Permeke also had a ruddy complexion, but it was only reflected in some Devonshire landscapes painted when he was recovering from battle wounds during the first world war. The large canvas called 'Harvest in Devonshire' would be a valuable addition to the Tate collection. It is not a 'visual' painting, and although the huge slow rhythmic strokes of red and yellow paint faintly adumbrate a landscape they are more eloquent as the record of a physical response to the sun. One wouldn't think this picture had been painted in Devonshire if one didn't know its title, but it might, in a side-long fashion, call to mind one of D. H. Lawrence's large blonde women stretching and relaxing and letting her Northern soul go to pot under the sun of some smooth Southern gentleman, and I find it extraordinarily moving that Permeke's one assignation with Provence took place in Devonshire.

As soon as he was back in Belgium, the characteristic dark-brown shadows and straw coloured light returned to his canvases, and his paint took on the look of farmyard manure and conveyed some sense of its acrid warmth—which is just as it should be in an artist who was more concerned with the soil than with the sun.

It is his draughtsmanship that betrays his provincialism. It is facile, sophisticated and emptily powerful. In the twenties, his figure drawing was influenced by physical

1

cubism and African wood carving, and the picture of a doltish couple entitled 'The Betrothed,' 1, is a good example of the mannered way in which he used these influences to demonstrate his solidarity with the peasants. Later he went back to Maillol and Gauguin, with the same end in view and the same arty results.

Fortunately his brushstrokes did not take very kindly to boundaries set by his draughtsmanship, and all his finest landscapes and farmyard scenes occurred when the paint blotted out the drawing. For this reason, it seemed to me that the Belgian selectors of the pictures shown in London chose far too many works in which

drawing had the upper hand. This mistake was not made when he was shown at the Venice Biennale.

The sculptor César Baldacchini, who was born in Marseilles and works in Paris, and who prefers to be known by his Christian name, has recently held his first full-scale London exhibition at the Hanover Gallery. He is a subtle craftsman who works in the atmosphere of Parisian avant-gardisme as if it were a tradition handed down from father to son. He is at his best when his craftsmanship is at its most dazzling and obtrusive, and the images which emerge from what appear to be arbitrary complexities of construction and

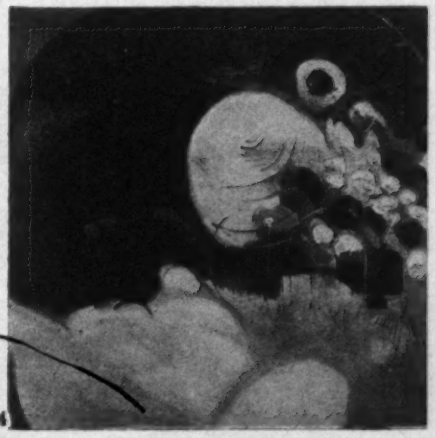
2

a multiplicity of minute technical events are alert and compelling. The iron torso of 1954, 2, constructed with preposterous patience and overweening virtuosity is the most compelling of all. It's a thick piece of female façade, supported at the back by a highly complicated array of metal rods. The contours of the body are built up with hundreds of tiny squares of plate metal welded together, and the textures range from a smooth polish to fearsome effects of scab and fire-rot. The result appears to represent a far-gone carcase propped up after evisceration, and exposed in a mood of celebration. Considered as a cut from a cadaver, it makes a macabre if belated joke against the cult of the Greek fragment. Considered as a demonstration of Dali's notion that the mucous of corruption can assume, under the proper 'paranoiac-critical' gaze, 'the hard and blinding flash of new gems,' it is very nearly successful. But I do not know to what extent this work carries out a preconceived intention, and much of its charm—if this is the right word—seems to spring from the free play of technical fantasy.

Some of César's most recent works give me the impression that they arise from gimmicky ideas for sculpture which have not sufficiently taxed his craftsmanship. The winged figures, for example, are striking enough at first sight, but the immense, irregular sheets of flat metal which stand for wings are dead and unflappable, and the attempt to enliven their surfaces with tachist textures is inconsequentially modish.

3

In John Piper's recent exhibition at the Leicester Galleries there were three or



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four large oils which make a refined and highly personal contribution to abstract impressionism, and they are probably his most important works to date. Some others which were closely related to them in design were marred by accents of hard, cold, chemical-looking colour that jumped out of the picture plane. The painting called 'West Country Town,' 3, is a lovely essay in the total animation of a surface. The town itself has a dream-like ambiguity and remoteness, and Piper may have had both Monet and Debussy in mind when he was painting this picture, for the buildings are submerged, and half-hidden by textural scribbles that resemble grasses floating on the surface of a pool.

Jack Smith's recent paintings, exhibited at the Beaux Arts, have some of the fascination of ruins, for they depict familiar phenomena savaged and nine parts consumed by a milky substance which the catalogue describes as 'light.' It is clearly a situation which calls for drastic reconstruction, but so far his titles are like proclamations that are not being heeded. One knows that Smith can meet the challenge of a title like 'Clouds in a Pool,' but the picture to which it is attached is neither a plausible impression nor abstraction, 4, and its inventions tend to belittle the theme.

5

The idea of exhibiting at the Walker Art Gallery, Liverpool, a selection from the four thousand items submitted to the John Moores Competition didn't turn out to be a very good way of giving Merseyside 'the chance,' as the catalogue puts it, 'to see an exhibition of painting and sculpture embracing the best and most vital work being done today throughout the country.' Far too many important artists were either not represented at all or represented by indifferent works. But the prizes went to deserving cases. The third prize in the junior section, for instance, was awarded to Terry Lee, a student at the Slade, for his 'Bathroom, Regents Park,' 5. Because Lee is at present much concerned with the paintings of Munch, the bathroom fittings are beginning to heave under a misplaced attack of hysteria, but this young man paints knowledgably and well.

Robert Melville

FURNISHING

FITNESS FOR PERSON

The parish Church of St. Mary's, Whitby, stands in its undulating grave yard next to the Abbey. Seen together they form a contrast in intention, the Gothic Abbey soaring to God come wind come weather (and how it can come on that bare cliff-top, northern-feeling even at midsummer), the Church flat, squat and anchored, its tower rising only a few feet above the complicated roofs and crenellations—a swan and a tortoise. Mrs. Gaskell liked it but disapproved of 'the weeping-willows, urns and drooping figures' of the wall monuments. Murray's Guide to Yorkshire after three double-column pages on the Abbey, and before taking the Traveller by the hand to see 'a fine fossilised Crocodile' at the Museum, says rather guardedly 'it lies below the Abbey, contains some Norm. portions, but has been so changed and filled with pews and galleries that its interior is strongly suggestive of a ship's cabin.'

This is still so today, but whereas in 1867 it was a matter of embarrassment, it now seems right and eminently fitting that the parish church of a town noted for the prowess of its fishermen, for its whaling pioneers, for a locally designed and built fishing cobble, and for having given birth to Captain Cook *should* be 'strongly suggestive of a ship's cabin.' Some churches though memorable have very little connection with their begettors, and might be anywhere. St. Mary's could, I think, not be anywhere else.

From the moment one steps into the porch through a wooden gate and under a Tudor arch (both of which could well serve as a template for the inverted hull of a Whitby cobble) one is in the hands of the shipwright. The Church is wonderfully light, and gives off a sense of exaltation perhaps because of the tremendous vitality of its contrasts, contrasts between things and between periods of time. Here there is not even a hint of the tenet that new things put into old settings must blend, must conform—that death-wish of the architect. The eighteenth-century gallery goes slap across the Norman chancel-arch, 1, enraging the writer of Murray's Guide, but how much they have to give each other, these two. The flat ceiling, the low round arches and the tall box pews might be oppressive were it not for the wonderfully elegant soaring pulpit, and the gaiety of the white whirligig columns, 2, and cover. Though these latter may give rise to thoughts of the Armada rather than to Our Father, they were familiar things in the lives of their makers, kith and kin of the great gilded sterns, of the ornaments and carvings of caravels. There are, too, the more expected contrasts to be seen, and at full blow—wood and stone, white paint and brass, green baize and crimson baize, immensely thick walls and windows with very thin glazing bars.

2

I had thought to call these notes 'a landscape without figures' but on looking at these photographs it seems that they have caught the sensation that there has been somebody there, or that there ought to be somebody there, not to add to the admirable composition but to complete the unity of a part of the gallery, or a chair. It is nonsense to put meanings into the hands of dead carpenters, but perhaps this feeling of incompleteness is because they knew that the chair or pew or door which they were making was not only for a man or woman to sit in or go through but that it would momentarily become part of the man or woman. Look at the pulpit. The two slender columns supporting the ornate sounding board seem frighteningly fragile, but put a robust and billowing parson in the pulpit, and he may praise and damn and even thunder without any apprehension on our part that the lid will snap shut. Could one call this 'fitness for person'? There are several traces of this in these photographs; it is a quality that could, and perhaps should, link the oppositions of taste. The future writer of the guide-book might here find common ground with the future Mrs. Gaskell.

1

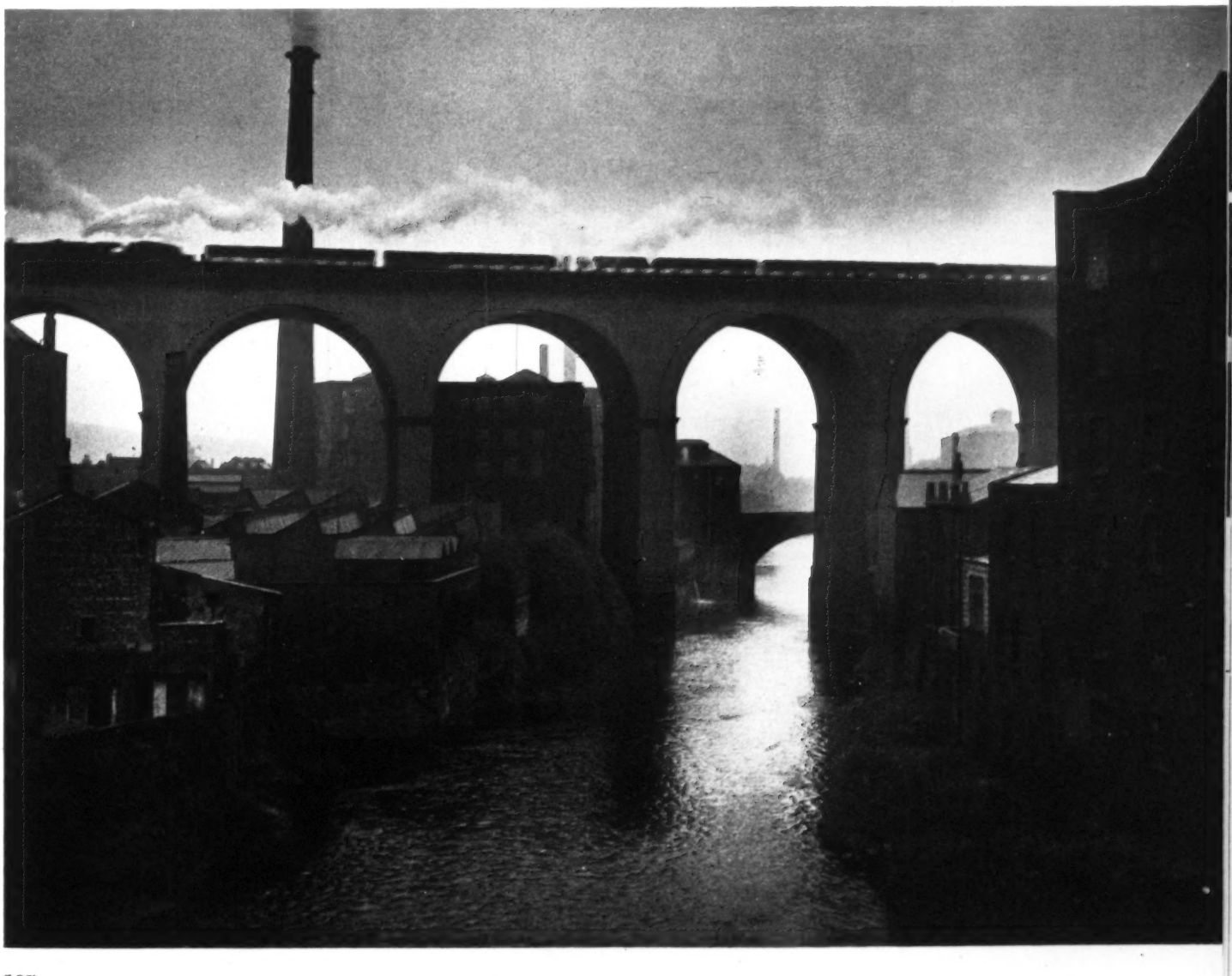
Kenneth Rowntree

FUNCTIONAL TRADITION

ON THE RAILWAYS

The photograph below, taken by Eric de Maré, sums up a good deal of what we mean by the Functional Tradition. It shows architecture reduced to its basic geometrical elements and gaining thereby in vigour and sincerity. It shows the inherent qualities of building materials permitted to determine the way they are used. It also shows the startling new scale achieved in the period when the Tradition flourished most strongly, the early nineteenth century: to say nothing of the somewhat grimy industrial setting in which many of its monuments are to be found. The scene, 2, is a summer afternoon at Stockport, the cotton town on

1 *Viaducts at Congleton (above) and Stockport (below).*



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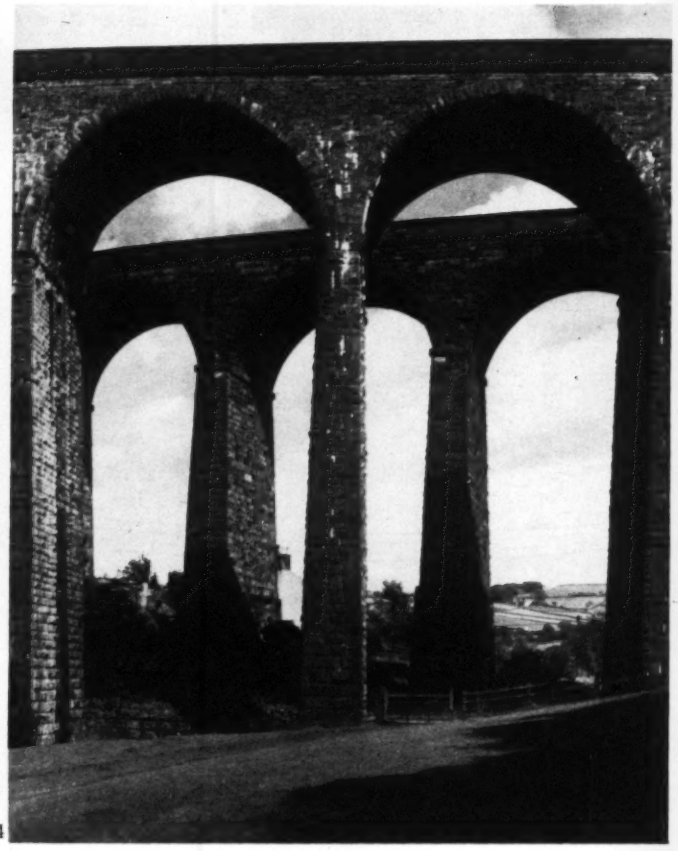

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Above, viaducts at Welwyn and Chapel-en-le-Frith. Below, Buxton station.

the Lancashire-Cheshire border.

It is also typical that the central feature of the scene, threading its way between the tall riverside warehouses, should be a railway viaduct, because the Functional Tradition is closely linked with the industrial revolution, which itself was inspired by (and inspired) new means of transport—first the canals, then the railways. Moreover the viaduct is the most striking architectural achievement of the railway age. It is to be found not only as part of the picturesque urban scenery of places like Stockport, but in peaceful rural landscapes like 1 (Congleton, also in Cheshire), which shows also how railway engineering, striding ruthlessly across country has, with time, become assimilated into the traditional English scene.

Railway viaducts, in spite of the impressive developments in science and technology that have taken place in the hundred years since the best of them were built, still have a breath-taking scale. Nothing grander of its kind has been built in brick than 3 (Digswell viaduct, Welwyn, Herts.) or in stone than 4 (viaducts at Chapel-en-le-Frith, Derbyshire).

From viaducts the enquiring eye naturally turns to stations, but here the Functional Tradition is not so much in evidence. Most of the main line termini were architects' showpieces, not the anonymous work of engineers. Euston and Paddington, Temple Meads at Bristol, and Newcastle Central are splendid monuments to Victorian self-confidence and taste, but they have not the vernacular qualities we are concerned with here. Of the London termini only Cannon Street (AR, August, 1956, page 74) and Kings Cross can be said to adhere to the Functional Tradition.

At the other end of the scale is the small station which adheres to a tradition peculiarly its own, based not on functionalism but on a romantic, rustic idiom evolved

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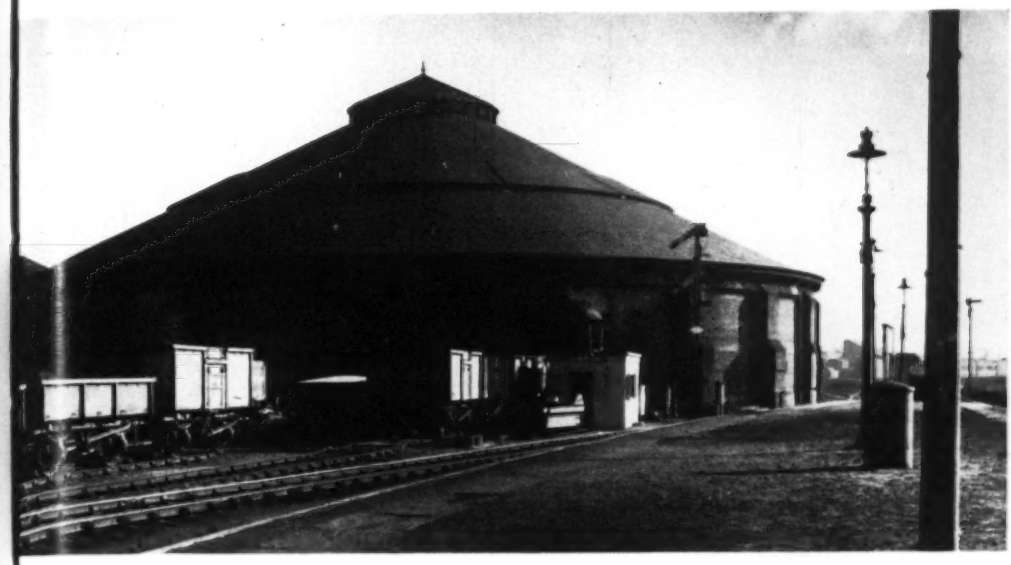

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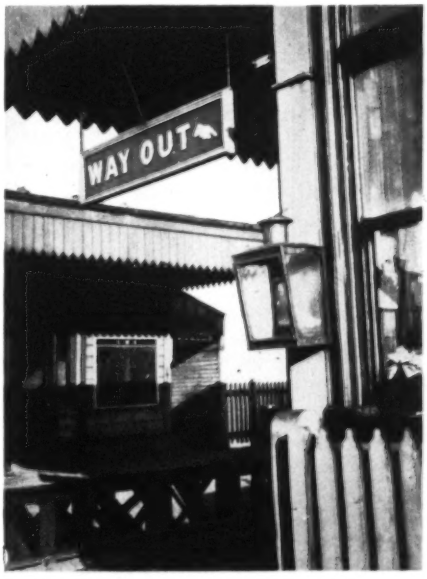
The engine shed at Camden Town: left, as seen from the platform of Chalk Farm station; above, from Chalk Farm road. 160 ft. in diameter, it was designed by R. B. Dockray in 1847. Below, signal box and railway storehouses at Garstang, Haworth and Littlewoorth.

as part of the opposite process to that by which uncompromising functionalism becomes absorbed with time into the landscape: the process of camouflaging and humanizing the products of a new age so that they leave the old landscape undisturbed.* Nevertheless in station interiors individual features, notably the iron roofs, belong unmistakably to the Tradition. 5, Buxton station, represents the many interiors of this kind with its frankly expressed iron arch and tie-rod



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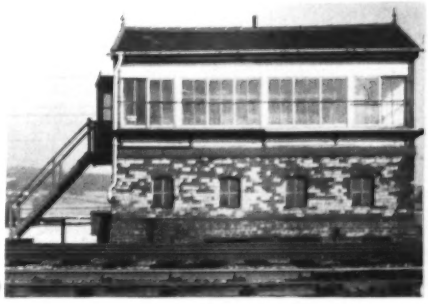
construction; also its typical blind-arcaded screen-wall on the right. Other features of station architecture that have exploited functional needs to create a strong character of their own are the timber details—especially of overhanging roof edgings and railings. 6, by John Piper, taken in a wayside station in Derbyshire, is typical. Functional details of this kind are to be found even in the most romantically designed rustic stations.

The Functional Tradition is to be seen on the railways in several other types of structure. A famous example is the circular engine-shed at Camden Town, 7 and 8, alongside the main line going out of Euston. It is of brick with a slate roof. There are also signal boxes, like 9 (at Garstang, Lancs.), though many signal boxes belong rather to the domesticated romantic tradition already referred to, and are



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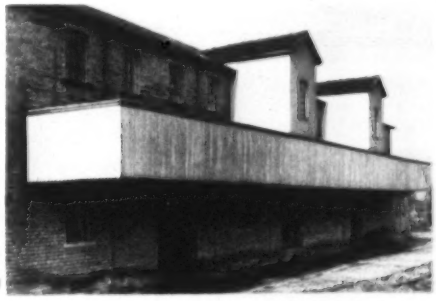

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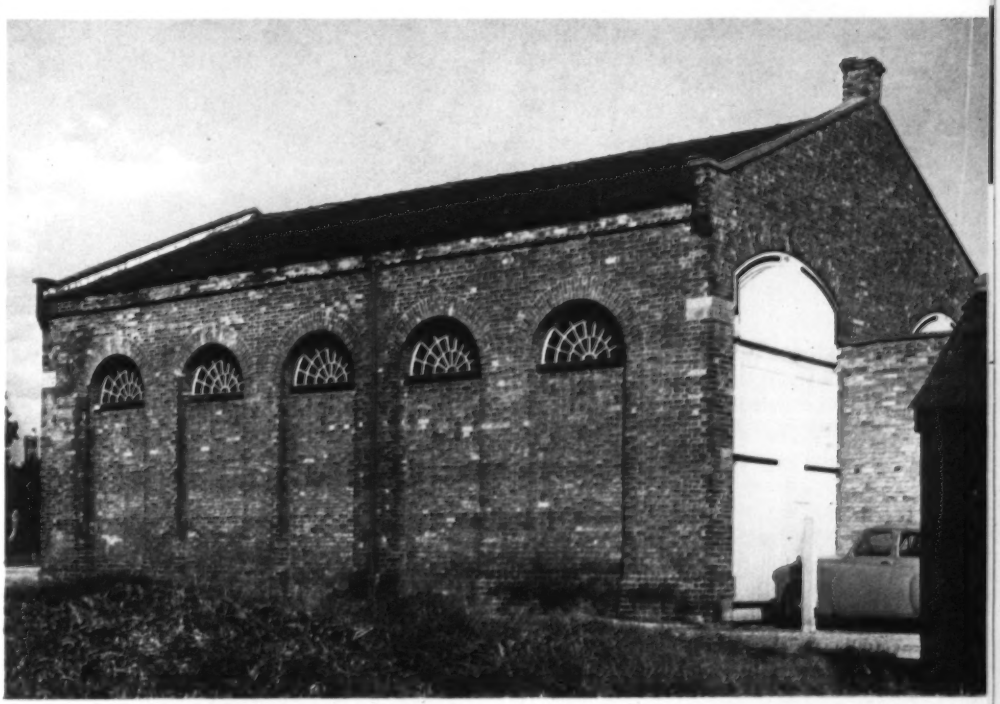

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* See 'Domesticating the Iron House,' AR, June, 1942.

embellished with finials and barge-boards. And there are storehouses of various kinds like 10 (at Haworth) and 11 (at Littleworth station, near Spalding). The last, with its arcaded red brick walls, is typical of many simple agreeable buildings that the passenger can enjoy from the windows of the railway-train. **J.M.R.**

WORLD

PALAZZETTO DELLO SPORT

Pier Luigi Nervi has a Midas touch with concrete, and in his hands this material, that used to be denounced as mere vile stuffing, becomes one of the most eloquent there is. The vault that he has just designed for the Palazzetto dello Sport, which is to house the indoor games at the Rome Olympics, combines the Roman gravity of a coffered vault with a sense of lightness that only modern construction can achieve, and made manifest by the complete circuit of windows that run round without interruption under the eaves, 1—an effect that is equally apparent from outside (see frontispiece on page 90) and is accentuated by the scalloped lunettes between the supports.

The accommodation required in this small stadium, whose overall design is the work of the architect Annibale Vitellozzi, included enough playing area for basketball or tennis, which leaves accommodation for 4,000 spectators, but another 1,000 persons can be fitted in when games requiring less space are played. Outside the arena and seating are a ring of rooms accommodating all the necessary ancillaries, yet within an overall diameter of only 190 feet. Public-address, ventilating and floodlighting equipment is concentrated in the eye of the dome, whose clear sweep down to the eaves is without visual obstruction.

It is at the eaves that most of the visual interest of the scheme is concentrated. The lines of the ribs of the precast coffering are here brought together four at a time and gathered on a point-support, which is itself sustained by the meeting of a pair of the upper arms of two adjacent Y-struts outside. The contrast between smoothly rendered surfaces within, 3, and *beton brut* without, is accentuated by the 'shake' in the glass of the windows, and gives a great feeling of lightness combined with massive security. **Michel Santiago**

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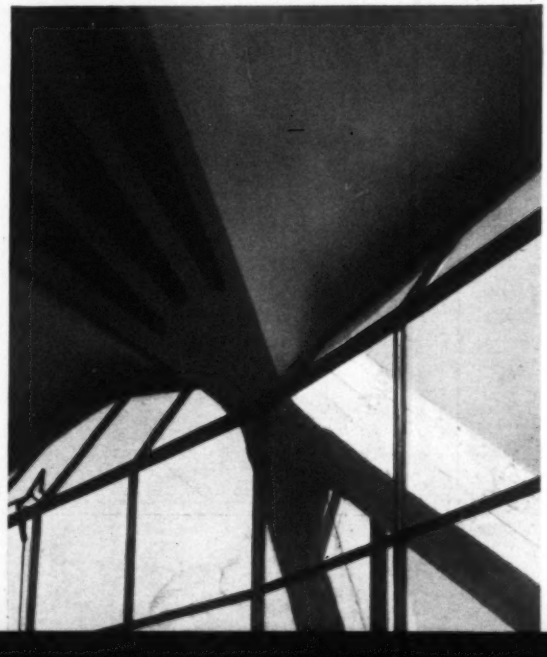

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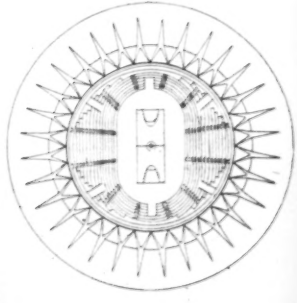
1. *Interior of the Palazzetto dello Sport showing the sound, ventilation and floodlighting equipment concentrated in eye of dome.*
2. *The building under construction showing the W-struts erected and the pre-cast coffering being laid.*
3. *Junction of windows, external Y-struts and roof vaulting.*

Below, plan of the stadium.

Facing page ☞ *worm's eye view of a section of the coffered vaulting.*



COUNTER-ATTACK

47. Positive Planning (*Ministry of Housing*). In a recent speech to the Town and Country Planning Association the Minister made a case against any greater degree of positive planning, in big or small things, because it would interfere with individual freedom. This sounds a reasonable proposition on the face of things but isn't on close inspection; in fact at the moment the Ministry of Housing is the least of the present threats to freedom.

The plain truth is that the big government things—power stations, rocket ranges, refineries—get put where the proposers want them largely over the head of the housing ministry ('in the national interest') and certainly completely over the head of the man in the street. What possible extra infringement would be created by having all of these schemes worked out coherently inside a national plan?

At the other end of the scale, Mr. Brooke would not retract the 'permitted development' order (see AR, December, 1956, page 432) because it would 'rob the freely elected local authorities of their present discretion.' But the 'freely elected local authorities'—usually acting in committee and in camera—are in fact the worst present-day offenders against individual freedom. The Bureau would like to put this paradox to Mr. Brooke: because the lamp standards in Newton Road, Paddington, were outside planning permission, the residents had no statutory redress whatever and it took a national outcry in the press to get the council even to re-open the case. If the lamp-standards had been subject to planning approval there would have been a planning decision, and at least the hope that the ministry might heed public demand to the extent of granting a local inquiry. With local authorities acting as many of them do at present, rigorous planning cannot give the citizen *less* freedom, because in these matters he has none already; and it might at least assure him of a fair hearing. The whole planning system is a gift to any local Napoleon; the minimum safeguard should be first that everything should be under planning control and second that a local inquiry should be obligatory whenever there is public opposition to an application which has been granted planning approval (instead of being held only when an application has been rejected, as happens today). That may take a lot more time and trouble but it's better than tin-pot Fascism, which is where we are drifting at the moment—and not through too much central planning but through too much power in the wrong hands through the muddled application of a mixture of control and *laissez-faire*.

48. Buckinghamshire (*County Planning Officer*). Berkshire recently held an admirable one-day conference of local authorities to find ways of improving the standard of local planning applications. The Bucks County Planning Officer, Mr. A. H. Prince, commenting thereon, said 'as far as this county is concerned I do not see any need at the moment for a campaign to improve architectural design.' Does Mr. Prince really think that the standard around Slough or Amersham or High Wycombe couldn't be improved? To the Bureau, which sees the efforts made by most county planning authorities in the course of the year, the design standard of Bucks is a long way from being the best.

49. Ashford by pass (*Ministry of Transport and Kent County Council*). This is the second Bureau notice of the town-and-landscape implications of current projects (for Markyate

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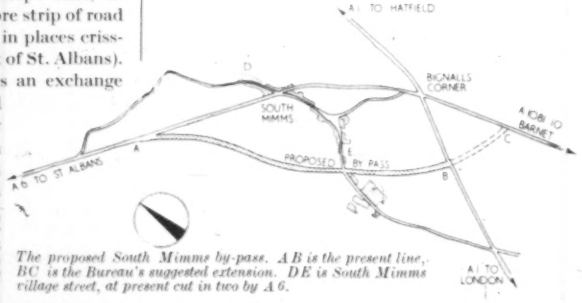
by-pass see AR, November, 1957). At Ashford the outstanding thing is that the landscape architects have so far let well alone. Apparently more complex landscaping is planned; this would be a pity, as the by-pass runs through open rolling country and no attempt has yet been made to prettify it: simple grass banks and central strip, simple sweeping curves and flyover bridges, 1, simple kerbs and a refreshing lack of unnecessary signs (the layby sign being purely informative might well have been put on the road surface without creating any legal difficulties). What might perhaps be faulted is some of the detail, particularly the bridge balustrades,* 2, and the roundabouts at either end, 3, where an original and low-mounted system of lighting would have been a wonderful advertisement of ingenuity to continental visitors.

As at Markyate, the by-pass has given the centre of the town a new lease of life. Ashford has one of the finest townscape effects in the Home Counties, an island site in the middle of the town where the three main roads are prolonged as footpaths to a pedestrian crossroads, 4; the fourth arm leads to the church. It now stands a much better chance of surviving as a focus for local traffic (it is well used and the buildings are all in good condition, unlike the similar island at Chippenham, Wilts.) than it did as a national road-block.

50. South Mimms, Middlesex (*Ministry of Transport and Middlesex CC*). A dual carriageway by-pass is proposed to the village as part of the general widening of the northern approaches to London. This is admirable, except that, as proposed, it will simply add one more strip of road to the Green Belt which is already in places criss-crossed to saturation (e.g. south-east of St. Albans). In landscape as important as this an exchange principle ought to be established (and could be established by the County Planning Office in collaboration with the Ministry) whereby a section of country is given back to the Green Belt, i.e. to uninterrupted rural use. In this case, if the by-pass were continued another five hundred yards to A1081 it would form a true relief road to South Mimms, and the existing A6 could be either blocked or drastically narrowed both at Bignalls Corner and north-west of the village. The minor road, D–E on map, could become once again what it was originally, the village street of South Mimms; a village street, incidentally, which could (*pace* Lionel Brett's recent talk to the Royal Society of Arts) take almost as many houses as it has already and benefit therefrom. Here is a case where building in the Green Belt could enhance it.

*Painted light 'amenity' green. This in fact doesn't blend with the fields at any season; as it is quite obvious that the object is a bridge balustrade it would have been better to make a virtue thereof and paint the railings black and white.

51. Harwich, Essex (*Borough Council*). The first redevelopment area of Old Harwich is to be rebuilt when Ministry permission for the finance has been granted. It consists of a block fronting Kings Head Street which is largely cleared already, 5: only one building, the Wellington pub, is to be kept. Old Harwich, 6 and 7, is another splendid nautical town like Poole (AR, January, 1957) or Faversham (AR, July, 1956), and has a similar problem: how to rebuild without sweeping away the superb and intricate pattern. The Borough Council say they cannot publish plans until financial permission is granted: a pity, because the work they have done in Old Harwich, though architecturally minor, has respected the existing pattern, in this case a much more important thing. It is very hard for one architect's office to attempt the effect of natural growth produced originally by perhaps two dozen builders. To assist this, might the Bureau suggest that each block be split between the borough engineer and an outside architect with a complex dividing line that would force a complex result and produce variety automatically through the different architects' different styles. At the same time a few more houses might be reconditioned—to make the job of matching new and old easier—and it would do no harm to insist that good architectural details like Georgian doorcases and shopfronts from the demolished old buildings are included in the new ones, because modern architects have far too little experience of the *objet trouvé* technique which came naturally to most of the original builders of these towns. If successful, a scheme like this might be the ideal subject for Civic Trust publicity and sponsorship, because it strikes at the root of the problem that the Civic Trust was set up to overcome: the marriage of old and new. There is incidentally at Harwich some land occupied in a desultory fashion by the Navy, 8, which runs between the town and the sea and would make a magnificent site for an open-ended square.



The proposed South Mimms by-pass. AB is the present line, BC is the Bureau's suggested extension. DE is South Mimms village street, at present cut in two by A 6.

5

6

7

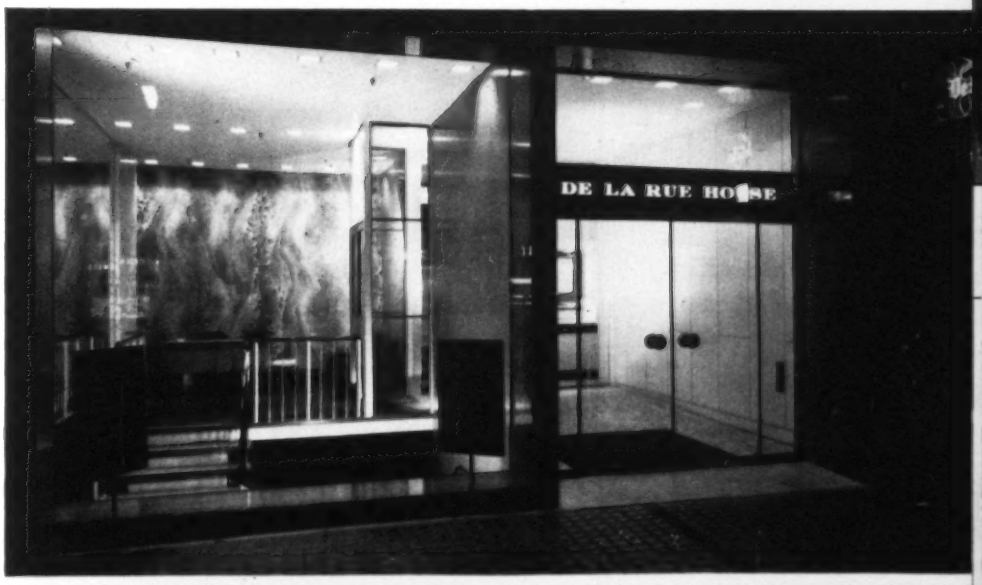
8

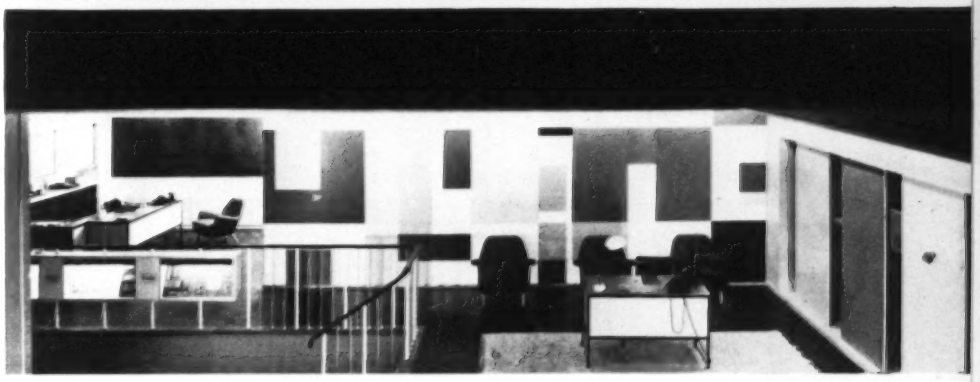
SKILL

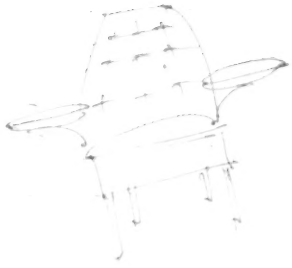
A MONTHLY REVIEW
OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN

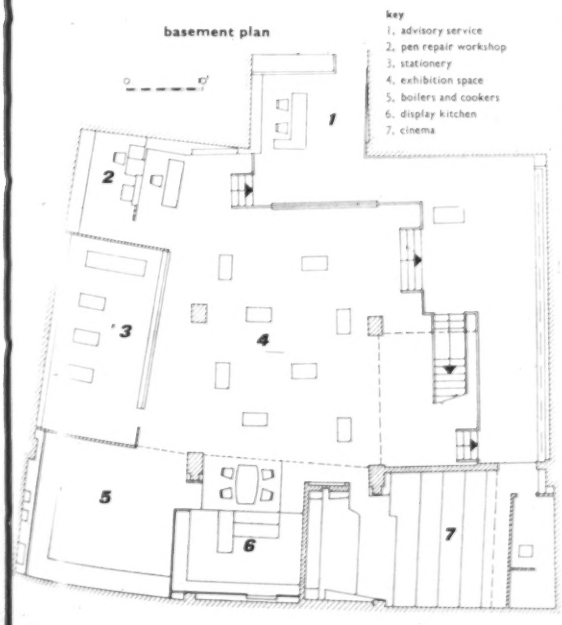
1 interiors
2 design review
3 techniques
4 the industry

1, the showroom from the street, below, a view of the main showroom in the basement.









1 INTERIORS

SHOWROOMS FOR THOMAS DE LA RUE, LONDON, W.1. *designers: Design Research Unit*

This showroom at 84-86 Regent Street displays plastic products, kitchen equipment, stationery and fountain pens. The original entrance to the second and subsequent floors has been expanded and a reception area formed beside it from which a staircase leads down to the main showroom in the basement.

In the design of the shop front the aim was the maximum vision from the street

2

3

SHOWROOMS FOR THOMAS DE LA RUE, LONDON, W.1

2, the reception area from the entrance lobby; the back wall is veneered with marbled plastic laminate. 3, the head of the staircase from ground floor to basement with an abstract plastic laminate panel behind designed by W. M. Dixon. On opposite page, 4, top, a view of the Formica Advisory Service section with displays showing the firm's various printing activities. 5, bottom left, the main staircase from the basement. 6, bottom right, the dining area with the island unit separating it from the display kitchen.

to the basement showroom. It consists of a light black bronze frame surrounding large plate-glass areas. Stainless steel forms the frame to the doors and transome; the fascia is in black granite. The reveals to the window are of $\frac{1}{8}$ in. thick teak veneer. A specially designed Gothic script is used for the name of the company on the upper fascia and this is repeated in an elaborated decorative form on the illuminated projecting sign and sand blasted into the main window at normal eye level. The name on the transome is illuminated in white letters against an opaque bottle green background, the house colour of the company.

Plastic laminate has been used widely for wall surfaces and fittings. In the entrance hall, the left-hand wall is panelled with 12 in. stripes of dark grey, light dove grey and ivory, the opposite wall being a clear yellow. A marbled design in lilac and black, which is reflected in the completely mirrored left-hand wall, covers the wall opposite the Regent Street window in the reception area, while the right-hand wall is green.

Facing the staircase in the basement is a large abstract mural constructed in plastic laminate by W. M. Dixon. On a raised area before descending into the showroom proper is an advisory bureau, where revolving colour wheels enable different patterns and colours to be compared and matched. Nine changeable panels display the latest patterns and at the lower level of the actual showroom, free-standing frames display fabrication technique.

In the kitchen which displays new cooker design and uses of plastic laminate, the hot plate and oven sections of the gas cooker are separate and form an L-shaped island fitting, with concealed lighting and ventilation above it. Plastic laminate with Bewick wood-cut designs is used in the dining area adjoining the kitchen. Ernest Race designed the circular dining table which has a Portland beige plastic

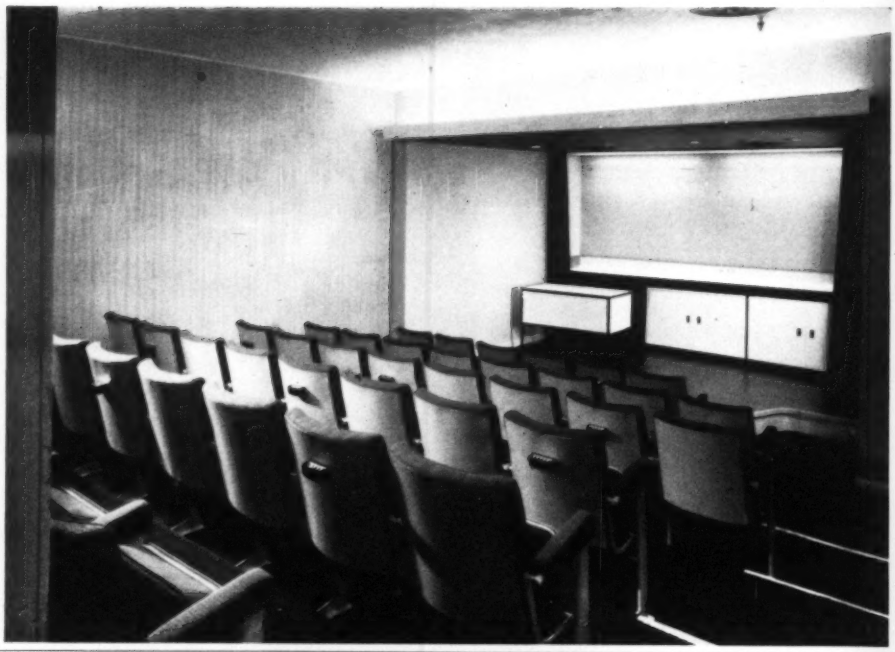
EMERGENCY EXIT

SHOWROOMS FOR THOMAS DE LA RUE

top with brass trim and a revolving central 'lazy Susan.'

The small theatre seating forty-five people is equipped for the showing of both 35 m.m. and 16 m.m. films. In addition to various colours being used in panels and fittings, the side walls are veneered throughout in medium Australian walnut plastic laminate.

The designers were Misha Black, Alexander Gibson and Philip Lucey; signs and typography by Milner Gray and Ronald Armstrong, displays by Ronald Ingles; all of DRU. Special plastic laminate displays were by Charles Monroe, and the kitchen was designed by W. M. Dixon and E. J. Marshall.

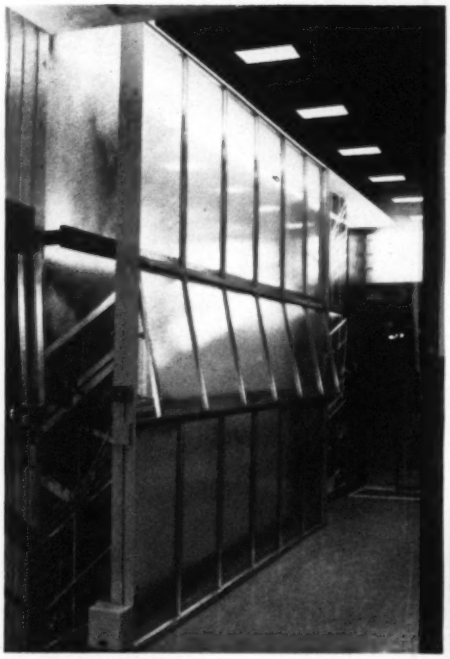


7, the private theatre, used for films and trade and public demonstrations. 7

WINDOW SHOWROOMS, LONDON, W.C.1

Architects: Bronek Katz and R. Vaughan
Architect in charge: Roger Balkwill

In this showroom at 37-39 High Holborn windows, doors and curtain walling for domestic, agricultural and industrial purposes are fixed to a grid. Exhibits can be bolted with friction grip fastenings to grooved pressed steel posts. These are fixed in position between perforated floor strips and grooved overhead beams. Colours generally are subdued, with areas of natural wood, slate, black leather cloth and mirrors. Bright colour is introduced in small lighted ceiling recesses and in stained glass panels. The staircase treads are $\frac{1}{8}$ in. sheet steel with grey panelled rubber fixed between $\frac{1}{4}$ in. steel stringers.



Two different uses of the metal exhibition grid: 8, displaying a section of curtain walling and 9, showing stained glass and window-frames. 8 9

USAF OFFICERS' CLUB, SOUTH RUISLIP

Designers: Clive Hunt and Edwin Meayers of Heal's Contracts

This is a complete reconstruction, redecoration and refurnishing of the officers' club at the USAF base at Ruislip, Middlesex. The interior of the building was completely stripped and the layout of the club entirely altered, now providing entrance hall and reception counter, lounge area, TV lounge, writing area, bar, and dance floor with dining area around it. A stage is also provided together with

10, the entrance hall and reception counter. 10

[continued on page 147

continued from page 146]

club administrative offices. Suspended ceilings are used throughout, incorporating an air extraction plant, which uses similar openings to the recessed pot lights.

The reception counter has a plastic laminate top and wood strip front; the reception area has a floor with random colour tiles and 'egg crate' ceiling light over counter. The lounge has slatted pine clad columns and Zebrano panelling; the carpet is a two-tone textured Wilton (light green and dark green). The bar counter has a teak and beech slatted front, and a photo mural at either side of it covers the complete wall area and shows a woodland scene. The dance floor uses maple flooring; the stage surround is slatted pine panelling, with acoustic tiles in the ceiling area above.

11

12

11, general view of the lounge area. The carpet is two-tone green; chairs are red, black and kingfisher blue and the occasional tables are mahogany. 12, the writing area in one corner of the lounge showing one of the purpose-made beech and mahogany writing tables.

HOUSE IN HULL

Architect: Alexander Potter

This is a conversion of an eighteenth-century waterfront house in Hull—29 Humber Dock Side—for his own use by the former head of the Hull School of Architecture. It was formerly Sam's Eating House and is sandwiched between a warehouse and a pub, and has been itself at various times both pub and brothel. Outside, the house is painted blue with white woodwork: the complete cost of purchase and conversion was about £1,500.

13, the kitchen showing cooking utensils put to decorative use; beside them is a black on yellow tiled mural by Gordon Cullen. 14, view of Hull dockside with the house arrowed; the tower of Holy Trinity is behind to the right. 15, the open staircase of polished pinewood linking the three floors of the house.

13

14

15

2 DESIGN REVIEW

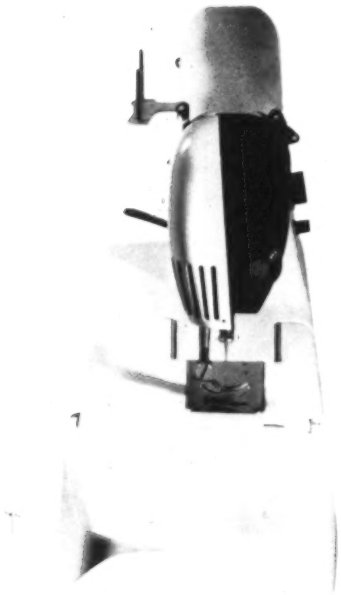
Necchi Sewing Machine

The Italian firm of Vittorio Necchi has produced a new sewing machine incorporating outstanding mechanical and aesthetic innovations.

The post-war renaissance in sewing machine design ended a period in which few developments had taken place for half a century. Until recently the housewife had little choice outside a variety of traditional round frame machines modelled with ample curves and decorated with gold Art Nouveau flowers on a black ground. Since then, most manufacturers have attempted to match technical developments towards power drive and automatic control with a domestic machine-age aesthetic which, curiously, had already been well established in other, less complicated, household appliances.

The large numbers of sewing machines now available from Europe, America and the Far East show a remarkably consistent interpretation of this modern look, though an exaggerated emphasis on 'style' rather than on a direct expression of mechanical function is a common failing. It has remained to only a few firms to lead the way with innovations of lasting significance, and Vittorio Necchi established the current square frame with a machine produced as early as 1934. Now Necchi has introduced a new machine, the 'Mirella,' which is equally revolutionary.

The 'Mirella' is a simple, non-automatic electric model whose unique appearance derives mostly from an unusual location of controls and the treatment of the balance wheel. This latter has been reduced in size and removed from its normal position at the top of the frame to the base of the supporting column, within easier reach of the operator's hand. Previous attempts to integrate the balance wheel resulted in the heavy appearance of the modern sewing machine frame, but the new Necchi solution allows the frame to be slimmer and lighter. The placing of the motor housing within the base plate rather than the frame, as in the earlier 'Supernova,' also contributes to this slimness. Most of the other controls, which normally protrude from the side, have, in the 'Mirella,' been grouped neatly at the back on a black plate which cuts vertically from top to bottom as if



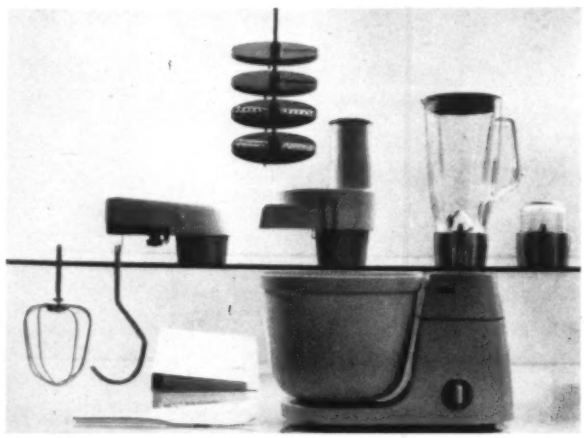
the frame were sawn through to reveal a contrasting interior. Similarly the head is cut back in a sharp-edged step to house the thread tension device and other mechanisms and is also finished in black to contrast with the ivory of the main casing. This deliberate grouping of controls at front and rear allowed the main frame to be made as a single casting uninterrupted by knobs and access panels, and the designers have seized this opportunity to create forms of great subtlety and distinction.

Originally conceived as a free-arm machine, the 'Mirella' can be converted into a flat-bed model by the addition of a hinged plate. As for other Necchi sewing machines the industrial design consultant was Marcello Nizzoli.

Braun Mixer

Among the most elegant, as well as practical, domestic machines exhibited at the recent Triennale was the Braun Mixer, as we should call it, which the makers more sensibly call a *Kuchenmaschine*, since it performs nearly all the kitchen functions that can be mechanized. As set out in the illustration, the various work-heads are, from left to right: mixer, with hooks for light and heavy work; mincer, with four different cutting discs; power blender; coffee grinder; and the mixing bowl, spatula and instruction book complete the kit, which, unfortunately, is not yet available in Britain.

Visually, the design represents a consolidation of a trend that has been evolving slowly in recent German work, and now seems to be becoming a dominant—possibly under the influence of the *Hochschule für Gestaltung* at Ulm, with which the Braun company, of Stuttgart, has connections. A good deal of German design since the war has either harked back to the 'modern' past, the Bauhaus, or has used a 'Messerschmidt aesthetic' with strong echoes of war-time aircraft design (this has even affected the sportier Mercedes cars) but, in Gerd Alfred Muller's work for Braun, forms that belong unmistakably to the vocabulary of the Fifties have taken on something of the cool nobility of the work of the Twenties—*Integrationsform*, as Hans Dieter Oestrich has called it, 'created out of the tension between intellectual and sensuous formal interests . . . clear, clean and pregnant expressions of function.'

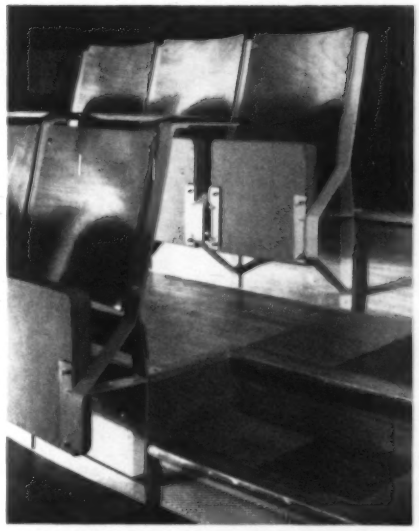


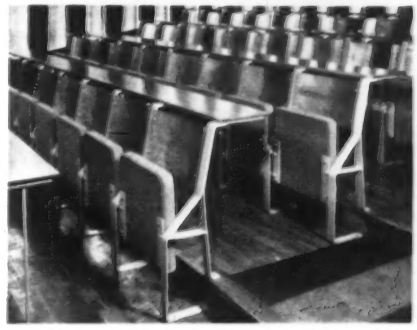
Ponti Chair in England

Conran Furniture, who already have an English agency for the celebrated Chiavari chairs from Italy, are now also to handle the equally celebrated chair designed by Gio Ponti, which should retail at about £9-odd in the standard form shown in the illustration. The world-wide success of this co-operative effort by a leading contemporary designer and an old-established handicraft industry prompts the query: can no English designer do an equally elegant re-styling job on the traditional Clissett chair which is so closely related to the Ponti-Chiavari type in structural form?

Race Auditorium seating

A new system of seating for stepped lecture halls, demonstration theatres, and so forth, has been developed by Ernest Race for Liverpool University, where it will be used in their various new developments, and will shortly be more generally available. The vertical supports are of welded steel strap, enamelled grey, the tip-up seats have foam-plastic upholstery covered in plasticized fabric, the backs of the seats and the writing desks are finished in lacquered mahogany. Although the supporting members are not adjustable on site, their design makes it easy to vary the dimensions at the factory to accommodate varying riser-heights, etc., and in addition the general conception of the system should facilitate economical and rapid installation of runs of seats of any length.





3 TECHNIQUES

SMALL SCALE LETTERING

by John Sharp

The previous article (AR, October, 1957) was concerned with the numerous methods of manufacturing letters for fascias, and similar large scale purposes. In this article small scale lettering is considered, with such applications as name plates, direction boards, and notices. Naturally there is an overlapping between the two categories, but where there is a limitation in size or application it is stated.

Generally there is a need for improvement in the design standards of the necessary notices, warnings, and instructions, with which we are inflicted. Industrial competition and new materials have reduced the robust cast iron notices of the railway age to rows of characterless sans serif capitals laid out to fill the smallest possible area, while the Ministry of Transport standard lettering has all but killed the art of street name plate design.

Consideration will first be given to the various forms of lettering that are integral with the background, and I will try to show that there are other materials than inlaid bronze that can be used for professional name plates and similar applications—materials that offer the possibilities of a wide range of type faces and colours, and yet are extremely durable. An interesting example of the possibilities of the new materials is shown by a comparison of the notices used by the National Trust, and the Nature Conservancy on their reserves. The former use a silicone-aluminium casting that incorporates their symbol and the name in a specially designed Roman face; there is often an additional notice below this carrying regulations and requests for aid: the latter use an interlaminate printed notice, that, due to the far more flexible nature of the process, incorporates the relevant section of the Ordnance Survey together with a description of the reserve and its object.

engraved lettering

The engraved brass name plate is seldom used now, though there are still plenty of examples about, some having the lettering practically obliterated by the constant attentions of the metal polish rag. It is undoubtedly the need for constant attention that has caused the decline in its use, though there would appear to be little reason why it should not be used in sheltered positions, protected by a coat of one of the metal lacquers used by the ironmongery trade to prevent corrosion. These lacquers have a long life and require only an occasional wipe over.

engraved bronze. The ubiquitous engraved bronze plate is the accepted norm for professional name plates, the dreary dull brown with its cream inlay being the standard introduction to a doctor or dentist. The lettering it cut into the face of a flat plate, and then filled with a vitreous enamel and fixed; a wide range of colours is possible, but cream predominates. The brown finish is produced by a self oxidizing process, and the whole plate is normally lacquered with an ironmongers clear lacquer.

engraved plastics. There are several types of engraved plastic plates.

a, the most familiar is an imitation of the bronze plate just described, using brown bakelite sheet, which is engraved in the same way as the bronze, the lettering being filled with a liquid plastic which is heat cured to a hard state. Visually there is little difference between the finished plate and a bronze one, and they are often used internally. They may also be used externally, provided they are polished regularly with normal wax polish, as the weather has a bleaching effect on the surface. An alternative black bakelite is also obtainable, and the infilling plastic is in a wide range of colours.

b, the lamination process whereby the majority of plastic sheets are produced is made use of to produce another engraving material that is sold under the trade name of Traffolite. In this a sandwich of several layers of different colours is built up, and then the top layer is machine engraved away to expose the colour underneath. This is widely used for instruction tags on instrument panels. The colours are permanent, and there are twenty colour combinations to choose from. The sheets which are up to 4 ft. square vary in thickness from 1 to 6 mm. A variation is a two-layer laminate that has one opaque and one translucent layer, lettering being engraved through the opaque layer to give translucent lettering. Several colours are available. Unlike the first process, the lettering is recessed, and unless cleaned with care is liable to become filled with grime.

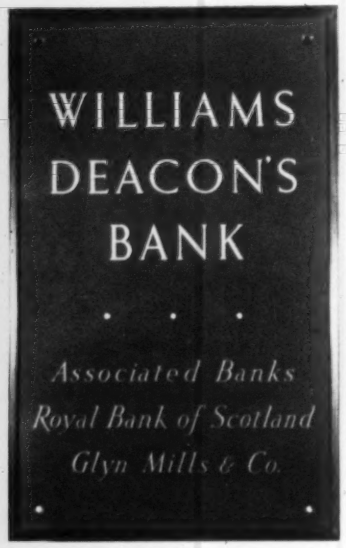
c, engraved transparent perspex has a quality of its own. The lettering is engraved into the back of the sheet and has the appearance of applied lettering; the engraving tool produces a V sided letter stroke that is quite attractive. Any of the transparent coloured perspex can be used, and the letters are coated with cellulose that can be of any required colour. These signs are not suitable for

external use unless the perspex sheet is bonded on to perspex backing as the cellulose does not weather well.

cast metal plates

It is, of course, possible to have a plate made up in any casting metal, but in practice only bronze, 1, and aluminium are generally available. Casting of plates becomes economical only where a number of reproductions are required; for instance, the price of a cast plate of which there are to be twenty reproductions is less than half that of a similar one-off plate. This is because the major cost is involved in the setting up of a pattern. These are usually a wooden base on to which are fixed die cast metal letters, which have a considerable splay to give mould clearance.

Aluminium casting is widely used for the name tags on machines, lifts, and the like. After casting they are generally shot blasted to clean off the moulding sand. They can be left in the shot blast state or, alternatively, the background to the letters is painted with an enamel, and the tops of the letters finished off to give a smooth shiny finish. With this type of plate, the length of legend makes little difference to the price, once the



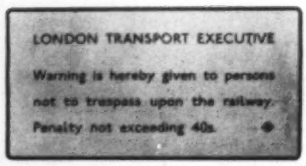
1, cast bronze plate.

pattern has been set up, as the costing is on the weight of metal used.

Various qualities of finish are obtainable on a given casting: generally a hard enamel is used to give the required colouring on top of a protective layer of chromate, but for long life a coating of clear lacquer should be specified.

other processes

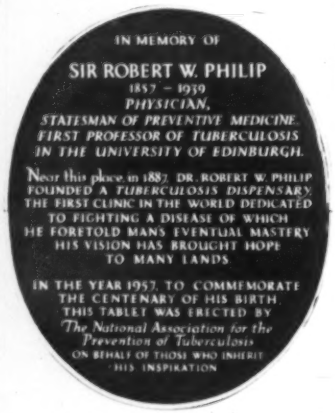
interlaminate printing. The familiar laminated plastic sheets provide another form of permanent lettering. Any required symbol or lettering can be printed, silk screened, or hand painted on to one of the laminates before the pressing process, and then sealed in the press under a top layer of transparent plastic, usually 'Melamine.' The result is a flush plastic sign that will withstand a great deal of rough treatment, 2. The choice of reproduction process depends on the numbers of repetitions required and the nature of the sign. A typical application of the printing process is for the reproduction of an electrical circuit on a panel inside a piece of equipment, and hand painting would be used for specially


LONDON TRANSPORT EXECUTIVE
Warning is hereby given to persons
not to trespass upon the railway.
Penalty not exceeding 40s.

2, flush Formica sign.

designed decorative panels. It is possible to have a sign overprinted on any of the standard decorative laminates that are in production. The weathering properties of this type of sign are illustrated by notice boards used by the Nature Conservancy; these boards usually include an Ordnance Survey plan with a description of the conserve. The plastic sheet is bonded to a sheet of aluminium, and is proof against the rigours of the weather as well as destructive youth. Here there is an alternative material to engraved bronze for name plates that is waiting to be exploited; one manufacturer seems to have the facilities for reproducing one-off plates at an economic price, if he is allowed to collect sufficient numbers to fill in a standard press size.

ceramic lettering. Panels up to two feet square can be made of ceramic material with lettering formed by the slip outline technique. In this the letters are outlined by a raised ridge of ceramic, and after the first firing the letter is filled with a ceramic enamel and then fired again.


IN MEMORY OF
SIR ROBERT W. PHILIP
1857 – 1939
PHYSICIAN,
STATESMAN OF PREVENTIVE MEDICINE.
FIRST PROFESSOR OF TUBERCULOSIS
IN THE UNIVERSITY OF EDINBURGH.
Near this place in 1887 DR. ROBERT W. PHILIP
FOUNDED A TUBERCULOSIS DISPENSARY,
THE FIRST CLINIC IN THE WORLD DEDICATED
TO FIGHTING A DISEASE OF WHICH
HE FORETOLD MAN'S EVENTUAL MASTERY.
HIS VISION HAS BROUGHT HOPE
TO MANY LANDS
IN THE YEAR 1957, TO COMMEMORATE
THE CENTENARY OF HIS BIRTH
THIS TABLET WAS ERECTED BY
The National Association for the
Prevention of Tuberculosis
ON BEHALF OF THOSE WHO INHERIT
HIS INSPIRATION

3, ceramic panel with lettering formed by slip outline technique.

The result is a plaque or sign with permanent colours and good resistance to weather, 3.

sand blasted glass. This is another process that is sometimes used for street name plates. A sheet of 'Vitrolite,' usually white, is sand blasted on the face with the required lettering, which is then filled with an enamel and fired. These signs have a clean appearance which is maintained with very little attention, and the advantage of the technique is that any face can be used, but the signs are liable to impact damage, and are not suitable for all situations.

street name plates

The manufacturers of Ministry of Transport approved signs are generally only set up to produce the approved sizes of plates and faces. This enables them to maintain quite low prices within those ranges, and as a matter of interest, the three main methods are described below.

The cheapest method is the partially sheared, stamped aluminium sheet. In this the cost of cutting the press tools for an alphabet is very high, but the setting up and stamping of each plate is very simple, so that the final cost of a plate is largely controlled by the cost of the aluminium sheet. After stamping, the plates are enamelled in two or three colours.

The next process in order of cost is the casting of a silicon aluminium alloy. Again the standard faces are the only ones available, but there is more freedom in the total size of a plate.

Finally there is the integral lettering of a rigid PVC sheet. This process is closely guarded by patents, but in principle a PVC sheet is silk screened with the required lettering, faced with a transparent surfacing laminate, and then heat treated. The heat treatment has the effect of fusing the printing, which is carried out in a PVC base medium, into the sheet. Unlike the other two methods this produces a flush surfaced sign that has a high resistance to weather and impact damage; its price, however, is considerably above that of casting. As the reproduction process involves silk screening, it is quite feasible to have any face or symbol reproduced, and it may well be an alternative process for name plates if a demand were created; at present, however, the sole manufacturer is only equipped to reproduce fully worked out designs presented in their final form.

It is quite easy to mistake PVC plates for vitreous enamelled steel plates. This is a process that was widely used, and is cheaper than stamped plates; however, it is very susceptible to impact damage, and once the surface of the enamel has been broken, rust quickly attacks the steel. It is for this reason that it is hardly ever used now for street name plates.

applied letters

These have largely been dealt with in the previous article, but there are some materials that are only suitable for interior use.

cast letters. Small cast bronze letters are obtainable from $\frac{3}{4}$ in. high but the faces are restricted to Roman or Gill Sans. Cast aluminium letters are also obtainable from $1\frac{1}{2}$ in. high.

plastic letters. Here there is a range cut in a casein sheet that is only suitable for interior use. The sheet is self coloured, and is relatively cheap. The letters are usually buffed to polish away the saw marks. A wide range of faces is available from $\frac{1}{4}$ in. upwards.

inlaid plastic lettering. Though strictly not applied lettering, I include here plastic lettering inlaid in wood. This is a skilled process, involving as it does the cutting out of the letters from a thin sheet of board, and then inlaying the hole with a cut-out plastic letter. The result is a very pleasant notice board.

cork letters. Finally there is the Graforel range of stamped cork letters. These are produced by an international company, and many of the 20 odd faces are of continental origin, their range being such that they cover most of the situations likely to arise. The letters range from $\frac{3}{16}$ in. to 4 in. in height and are approximately $\frac{1}{16}$ in. thick, cut from bonded cork. They are normally stuck into the required position, and being flexible, can be bent round cylindrical forms.

illuminated signs

The most familiar for internal use are plate glass hanging signs, which have sand-blasted letters on the back of a sheet of $\frac{1}{4}$ in. plate glass. The letters are painted out in white, and the whole sign is suspended from a tubular fitting that houses a strip light, the light passing through the edge of the glass to illuminate the letters. Due to the colour of common glass these signs generally have a greenish tint. The signs can be clear, or the background can be painted out in a colour. Where a double sided sign is required painting of the background is, of course, necessary.

As sand blasting is the process employed, any required face can be used, though the majority of signs are in Gill Sans or Trajan. Perspex may be used instead of glass, the lettering being reverse engraved and painted. The whole of the transparent range can be used, and clear perspex gives the possibility of a completely uncoloured sign.

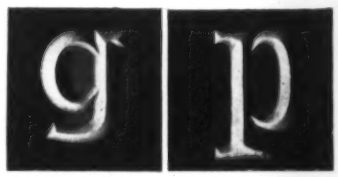
As with illuminated signs generally, perspex has enabled a great improvement in suspended Box Signs to take place. Generally an enamelled metal box having two perspex faces houses the lighting and control gear. The lettering or symbols are cut out and

4, enamelled box sign with perspex faces.

stuck on to the perspex face, and the backgrounds may be varied with different patterns as required, 4.

cut stone lettering

This, the most ancient form of permanent lettering, was omitted from the previous article as it did not fit into the category of applied lettering. Though monumental masonry, using Roman face, accounts for a very large volume of the stone carving now carried out, there are letter cutting sculptors in various parts of the country who develop their own alphabets for different stones. The stones most commonly used are Portland and Hopton Wood for external work and slate for interior. The work can either be carried out in a studio and then fixed



5, cut stone letters.

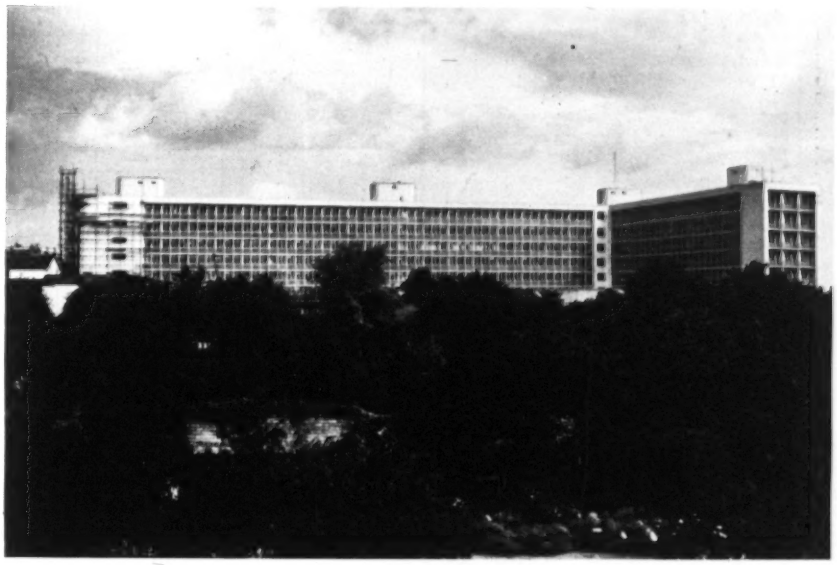
by cramps to normal stonework detail, or can be worked in situ provided access is reasonable, 5.

faces

Though the engraving process lends itself to the adoption of any given face, manufacturers only encourage the use of a limited range by lowering the price in relation to the rest. The most common faces are Gill Sans and Trajan, though the trend at the moment seems to be towards widening the standard ranges, and some quite interesting alphabets are included, 6–10. As with applied lettering the better manufacturers issue sample sheets of their range.

[continued on page 152

BUILT IN EIGHTEEN MONTHS



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continued from page 150]

Plastic plates are usually engraved by means of a pantograph machine. In this a small rotary cutter repeats to a reduced size the movements of a pattern following arm. The line produced is very like that of an ink stencil; indeed, the alphabet used to cut instrument panel lettering is the same as the well-known stencils. There are, however, a few faces which are cut in reverse perspex that have been evolved with this machine, and are quite distinctive. These include the very effective script Gillies Gothic, 6, and certain Egyptian and Roman faces cut in outline only.

Casting faces are much more limited, and for small notices are restricted to a Sans Serif and a Roman. In theory other faces could be obtained, but the cost of pattern making would be so high as to make it only feasible if a large number of reproductions were required. It may still be possible to find patterns of some of the robust alphabets used for cast street name plates, but most manufacturers are not able to hold stocks of 'out-dated' faces, and consequently destroy them. There are a few non-standard alphabets obtainable that were specially cut for a county or borough authority, and it is worth enquiring for these. For the Ministry of Transport sign letter sizes are restricted to the recommended sizes, and there are only two faces, Sans Serif and Kindersley. This latter is a modified Roman that was designed to meet the requirements of the stampers press tools, its characteristic being a blunt ended serif.

Recently a well designed Italian electric clock system has been imported. There are a number of variations available, those showing the day and month, 11, being self-adjusting for leap years. The numerals are clear to read though the spacing is not entirely satisfactory due to the change mechanism which is used.

Surveyor

6

CASLON

7

KINDERSLEY

8

DORIC italic

9

saloon

10

6–10, examples of alphabet ranges from the catalogue of Dragard & Humble Ltd.

11, illuminated clock at the Westbury Hotel.

prices *have been obtained from typical manufacturers for two sizes of plate, one being a typical door plate, and the other a notice the size of a name plate. It is interesting to note that where a reproduction process such as printing or silk screening is employed, there is a considerable drop in unit price when quantities are involved.*

method	price	
	price of panel 14 in. × 2 in. with twelve 1 in. letters	*price of panel 15 in. × 10 in. with twelve 1 in. letters and thirty ½ in. letters*
interlaminate printing	108/3 — 370/8.	145/8 — 429/4
engraved bronze	27/6 — 37/4	95/8. — 131/6
inlaid plastic	18/8. — 26/8	65/5 — 81/6
reverse engraved perspex	19/6 — 22/8.	57/8. — 66/6
engraved traffolite	16/6	51/1
cast aluminium alloy	12/6	
subsequent castings	8/6	
carved stone letters (excluding cost of stone)	20/8.	100/8.

Cost of Ministry of Transport standard 4 in. Gill Sans lettering. Twelve 4 in. high letters on 9 in. background.

enamelled steel	30/8.	cast aluminium	53/8.
part sheared aluminium	32/8.	⅛ in. PVC	82/8.

acknowledgments The following manufacturers supplied information: Bakelite; Formica; Kershaw & Co.; Butler Jones; Chase Metal Products; The Lettering Centre; Dragard & Humble; Ward & Co.; Gowshall; Franco Signs; The Royal Label Factory. Also the following sculptors: Peter Watts; Ralph Beyer.

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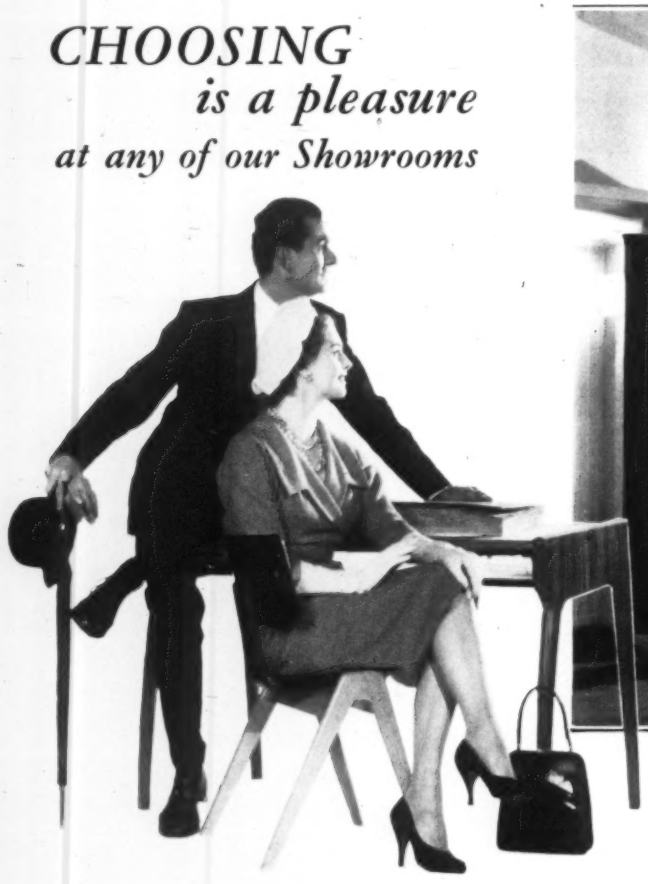

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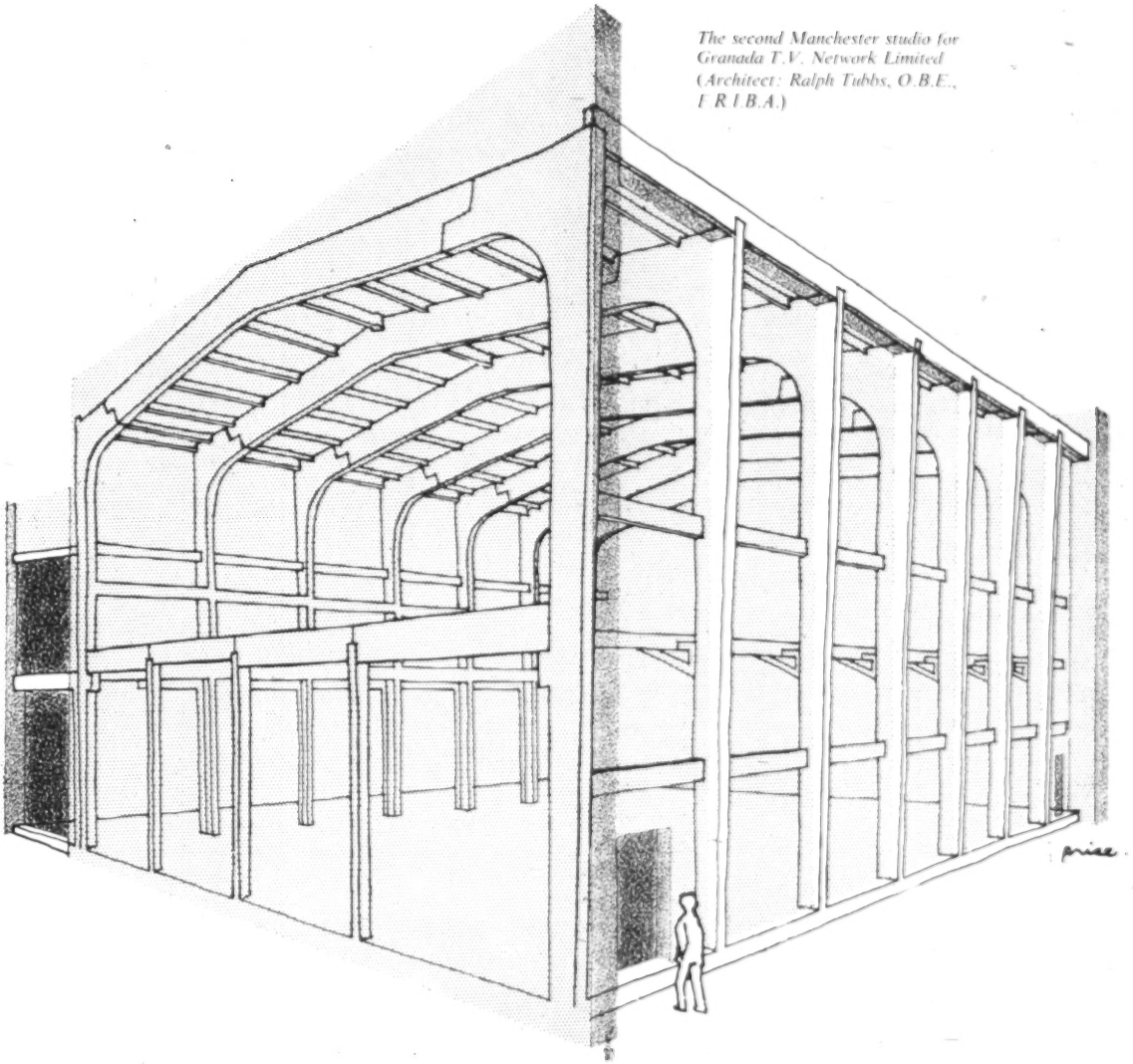

The second Manchester studio for Granada T.V. Network Limited (Architect: Ralph Tubbs, O.B.E., F.R.I.B.A.)

Concrete p.d.q.

The drawing indicates the simple finished appearance of the building, but also reveals the more complex reinforced concrete portal framework, with supported working gallery.
Here is an example of the speed with which we can construct a concrete framework of these dimensions. The detailed design was commenced on July 15th. The frames, 60-foot span, were precast on the site each in three sections—the heavier upper member weighing eight tons—and erected by mobile crane. The purlins were precast in our Manchester factory. By August 27th, six weeks later, the entire concrete structure was complete.

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4 THE INDUSTRY

How To Use Our Products

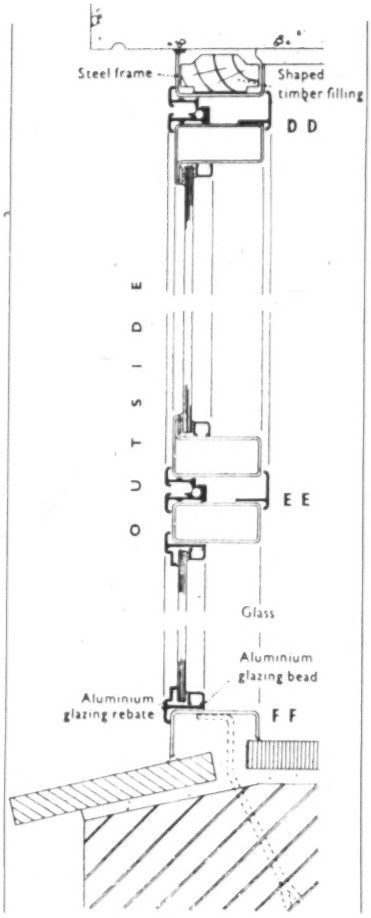
Though we are of the opinion that the phrase 'code of practice' ought to be confined to BS Codes of Practice, we welcome the decision of Robertson Thain Ltd. to issue a series of booklets which set down in a brief, intelligible way how building science applies to their products. They have published two of these 'codes of practice' at the time of writing: No. 1 on '*Materials for covering uninsulated pitched roofs and walls*' and No. 4 on '*Roof venting as a fire precaution.*' As you would expect, both of these useful little documents are strongly marked by the preoccupation with fire risk. It is indeed right and proper that architects and manufacturers should worry about fire risk; but it is nonetheless true, as is pointed out at the conclusion of 'Code of Practice No. 1,' that 'corrosion costs the country £600 million per year, and fire about £27 million. Corrosion is an ever-present hazard; fire is an accident, the risks of which can frequently be reduced or eliminated by good housekeeping, fire precautionary measures and good design.' Referring to the actual contribution to fire hazard of their own products, the writers point out, earlier in the same 'code,' that whereas in the Fire Grading of Buildings Part 1 an occupancy of *low* fire load is one in which the fire load does not exceed 100,000 Btu's per square foot, the contribution of RPM (which has the highest bitumen content of all their sheetings) is only 2,900 Btu's per square foot. This serves very well to put the matter in perspective.

'Code of Practice No. 4' on roof venting gives probably the best summary now available to architects of what—goodness knows—is an involved and contentious subject.

Robertson Thain Ltd., Ellesmere Port, Wirral, Cheshire.

A New Weatherstripped Window

During this winter the curtain wall (and indeed all wide fenestration) has come under heavy fire. This is not because any more evidence has been brought to light on functional performance, or even because of any serious body of complaint, but from a general and understandable feeling of nervousness. In point of fact there is little doubt that both architects and window manufacturers have approached the whole question too lightheartedly. The curtain wall *can* filter even the British climate and British town noise acceptably; but it will only do so if more precautions are taken than have been customary so far. Welcome improvements during the last few months have been the extension of the 180° pivot swing principle to other than wood frames (to make cleaning easier), the extension of double glazing and a great improvement in edge sealing (or, as we more often call it, weatherstripping). All of these are to be found in the new Aygee 'Resistal,' a new steel pivoting window with a very ingenious form of aluminium weatherstripping (see illustration). This degree of edge sealing, which is commonplace in America, is unquestionably worth while on account of the barrier it presents not only against heat loss but (as Thomas Markus pointed out in his article on *The Glass Curtain Wall* in *The Architects' Journal* for December 12, 1957) against sound infiltration.

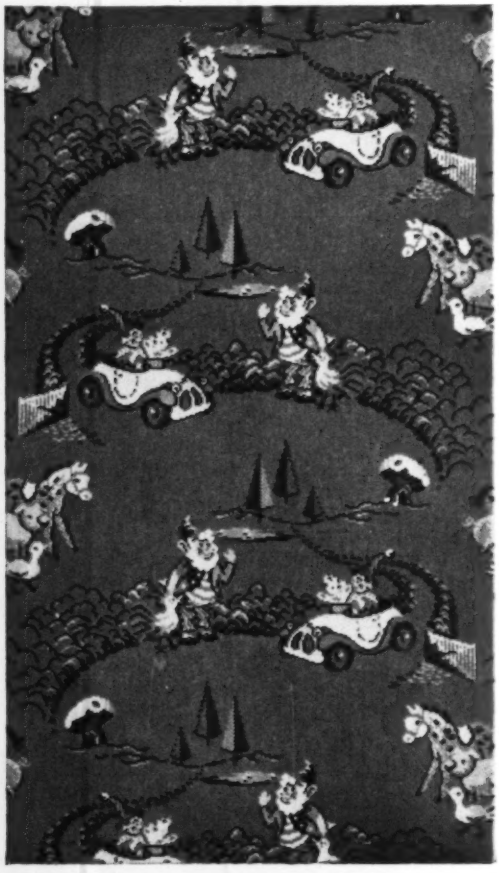


Aygee Ltd., Century House, 100 Westminster Bridge Road, S.E.1. (Waterloo 6314.)

Flexible Structures

The discovery last year by a team of architects and engineers working under the leadership of Donald Gibson (County Architect, Notts County Council) that mining subsidence is to be combated not by making foundations stronger but by making structures flexible, may revolutionize a much wider segment of building practice than that represented by schools built over coal mines. For the startling fact which emerged was that a structure designed to bend was cheaper because of the saving in foundations than a corresponding structure designed to be rigid; and the question naturally arises of why can you only take advantage of this fact when you have to build on a coalfield? It may well be that the principle of internal adjustment built-in to structures posited at Nottingham may have enabled us to take full advantage of our lighweight building, so that our smaller buildings may henceforth rest on the ground and not rise out of it. Whether this proves true or not, a share of the credit must go to Brockhouse Steel Structures Ltd., whose system it was which was

[continued on page 156



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WIMPEY "NO-FINES" CONCRETE TECHNIQUE

The three new churches at Bell Green, Willenhall, and Tile Hill, Coventry, designed by Professor Basil Spence, O.B.E., A.R.A., F.R.I.B.A., and featured in this issue, have been constructed in Wimpey 'No-Fines' Concrete.

This technique has been used in the erection of many schools and offices as well as over 100,000 houses ranging from old people's bungalows to twelve storey flats and maisonettes, and provides yet another example of the versatility of this method of construction.

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continued from page 154]

adapted to meet the new requirements. Brockhouse have now issued a booklet describing their system and cataloguing the standard components which make it up. The most characteristic feature of the Brockhouse system is the use of a single stanchion size. Originally there was only one stanchion pattern, built up of two cold-rolled channel sections welded along the line of the toes; but they have now introduced a hot-rolled version of the same overall dimensions for the ground floors of three-storey blocks. It is, however, not the stanchions but the method of sprung bracing which is most interesting.

Brockhouse Steel Structures Ltd., Victoria Works, Hill Top, Bromwich, Staffs. (*Wednesbury* 0243.)

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